2017 Minnesota Tax Incidence Study

(Using November 2016 Forecast)

An analysis of Minnesota's household and business taxes.

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MINNESOTA · REVENUE
Tax Research Division

March 28, 2017

The *Tax Incidence Study* is available on the Department of Revenue's Internet web site at
www.revenue.state.mn.us/research_stats/Pages/Tax_Incidence_Studies.aspx

March 28, 2017

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

I am pleased to transmit to you the fourteenth 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 2014. It includes over 99 percent of Minnesota taxes paid, those paid by business as well as those paid by individuals. The study addresses the important question: "Who pays Minnesota's taxes?"

The report also estimates tax incidence across income groups for Minnesota state and local taxes for 2019. By forecasting incidence into the future, it is possible to give policymakers a view of the state and local tax system that reflects tax law changes enacted into law to date. Studies that concentrate only on history would not reflect the most recent changes to Minnesota's tax system. The 2019 projections also reflect the impact of the forecast for economic growth and expected changes in the distribution of income on the tax system. This version of the 2019 projections is based on the November 2016 economic forecast from the Department of Management and Budget.

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

Minnesota Statutes, Section 3.197, specifies that a report to the Legislature must include the cost of its preparation. The approximate cost of preparing this report was $100,000.

Sincerely,

Cynthia Bauerly
Commissioner

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Executive Summary

This study reports the distribution of calendar year 2014 Minnesota state and local taxes in relation to taxpayer income, along with projections for calendar year 2019. 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 fourteenth biennial tax incidence study prepared in response to the statutory requirement enacted in 1990.

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

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 $30.0 billion in taxes collected in 2014, a total that represents over 99 percent of all state and local taxes.
- Identifies the shares paid initially by households (62.3 percent by Minnesota residents and 3.5 percent by nonresidents) and the share paid initially by business (34.2 percent).
- Estimates the extent to which the business taxes are shifted to consumers (in higher prices) or labor (in lower wages), rather than being borne by owners of capital (in lower rates of return). Also estimates the extent to which the ultimate burden is "exported" to nonresident owners of capital or nonresident consumers.
- Calculates average household tax burden by income range. That burden consists of taxes imposed directly on households, such as the income tax or consumer sales tax, plus the household share of taxes initially imposed on business but shifted to households, the ultimate payers. Income is defined to include all forms of cash income, both taxable and nontaxable.
- Presents results by population decile, each decile including one-tenth of all households (the lowest-income 10 percent in the 1st decile and highest-income 10 percent in the 10th decile).
- Projects the 2014 results forward to 2019, accounting for the effects of both law changes and economic growth on the mix and level of state and local taxes.

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

Conclusions of the research are:

- Of the total $30.0 billion in 2014 taxes, 83.6 percent of the burden ultimately falls on Minnesota residents ($25.0 billion). The remaining $4.9 billion of the tax burden is "exported" to nonresident consumers or nonresident owners of capital.
- In 2014, the state and local tax burden on Minnesota households averaged 12.0 percent of income, up from 11.5 percent in 2012.
- The local tax share of tax revenue fell from 29.7 percent in 2012 to 28.1 percent in 2014, but is projected to rise to 28.8 percent in 2019. The state tax share rose from 70.3 percent in 2012 to 71.9 percent in 2014 and is projected to fall to 71.2 percent in 2019.
- The share of state and local revenue derived from taxes on income rose from 36.5 percent in 2012 to 38.6 percent in 2014 and is projected to rise to 39.2 percent in 2019. The property tax share fell from 32.4 percent in 2012 to 30.1 percent in 2014, but is projected to rise to 30.5 percent in 2019. The consumption tax share rose slightly between 2012 and 2014, from 31.1 percent to 31.3 percent, but is projected to fall to 30.3 percent in 2019.
- The business tax share of total tax revenue rose from 33.2 percent in 2012 to 34.2 percent in 2014 but is projected to fall to 32.8 percent in 2019.
- After allowing for the shifting of business taxes, the Minnesota tax system in 2014 remained regressive (as it had been in 2012). The full-sample Suits index, a measure of the progressivity or regressivity of a tax or tax system, rose (toward zero) from -0.052 in 2012 to -0.029 in 2014. This change reflects a substantial decrease 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 2014 Suits index would fall from -0.029 to -0.054.
- Total Minnesota income is expected to grow by 22.6 percent between 2014 and 2019. Tax receipts and tax burdens on Minnesotans are each forecast to grow more slowly (at 19.6 and 20.5 percent), so the overall effective tax rate is projected to fall from 12.0 percent to 11.8 percent of income.
- The full-sample Suits index is projected to rise (toward zero) from -0.029 in 2014 to -0.024 in 2019. Income growth rates are expected to outpace tax growth rates, thereby reducing effective tax rates in every decile except the 9th (where the increase is only 0.03 percent of income).

The fourteen biennial tax incidence studies cover a 26-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[2]

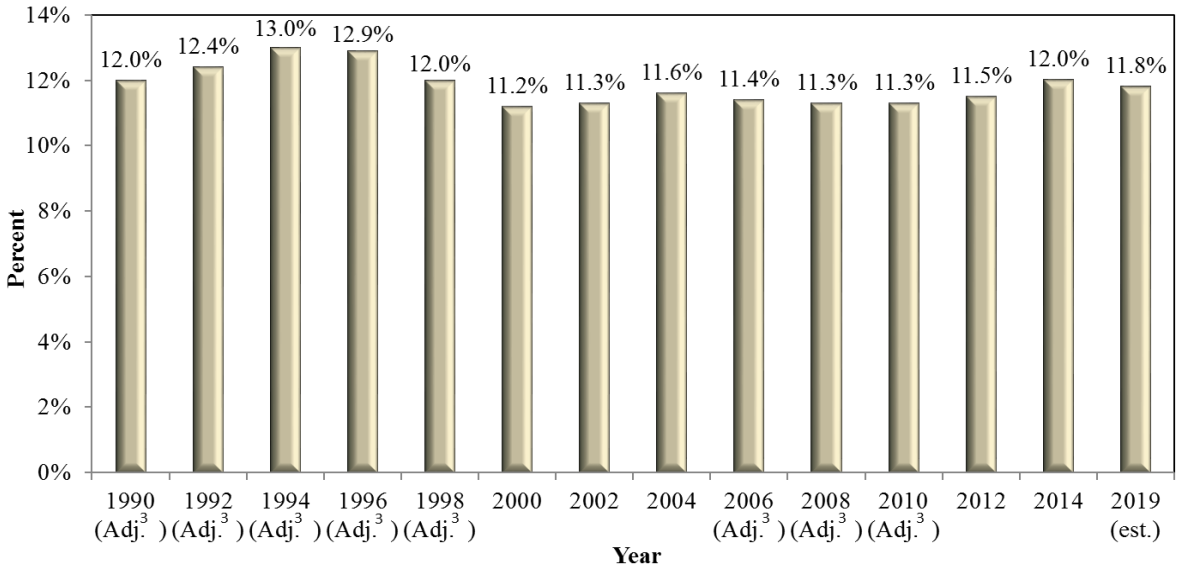
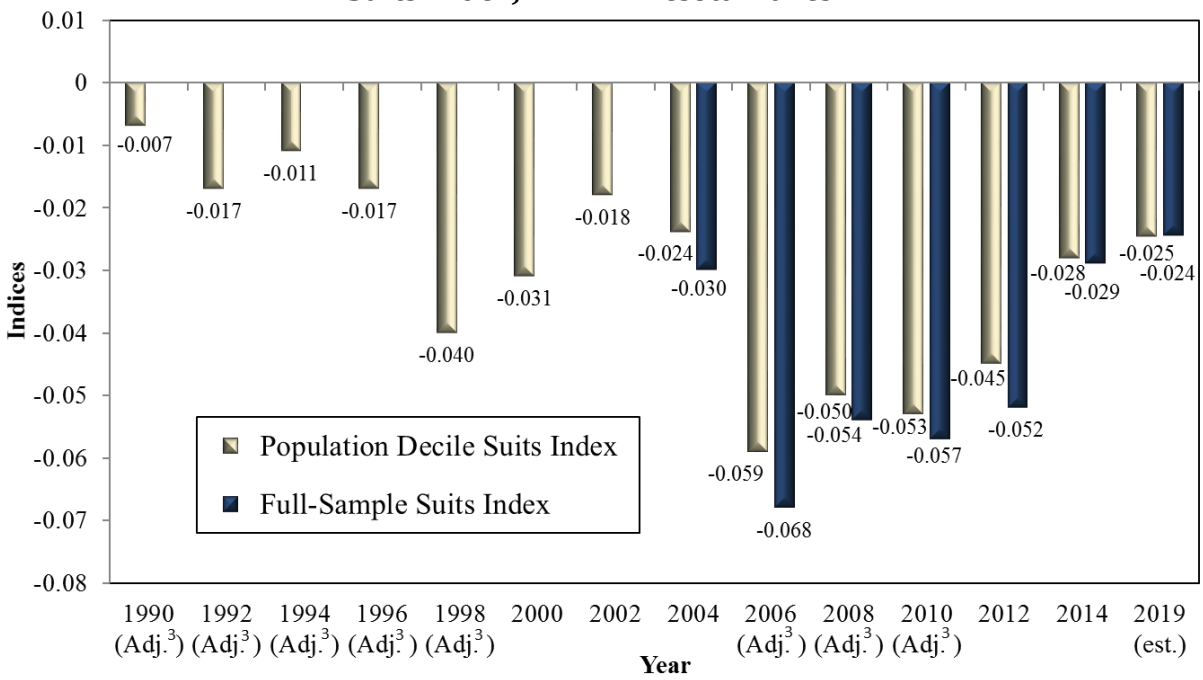


Figure E-2
Suits Index, All Minnesota Taxes[3]



[2] Effective tax rates for 2006 and later years would have been 0.2 percentage points higher except for methodological changes that identified additional income.

[3] 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.

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Chapter 1: Overview of Study

Minnesota State and Local Tax Collections

Minnesota collected $30.0 billion in state and local taxes in 2014.[4] By 2019, collections are expected to rise to $35.8 billion. This report estimates how much of the burden of total state and local taxes in each of those years falls on Minnesota residents and how the tax burden on Minnesota residents varies with income.[5]

Minnesota's 2014 state and local taxes are summarized in *Table 1-1*. In 2014, 71.9 percent of the $30.0 billion of tax was collected at the state level; local governments collected the remainder, largely from property taxes. The study includes taxes paid by business as well as those paid directly by households. The 30 separate tax components included in the study account for over 99 percent of total state tax collections and over 99 percent of local tax collections. For each of the taxes, the study identifies how the burden is distributed. Combining the results for each of those components provides an estimate of the distribution of the burden of the complete state and local tax system.

The 2014 results are based on a stratified random sample of almost 150,000 Minnesota households. The 2019 results are projected forward from 2014 based on the November 2014 economic forecast and are adjusted to account for law changes that took effect after 2014.

[4] If the $68 million excluded from this study were added, the total would still round to $30.0 billion (as on *Table 1-1*).
[5] 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 2014
($ Millions)

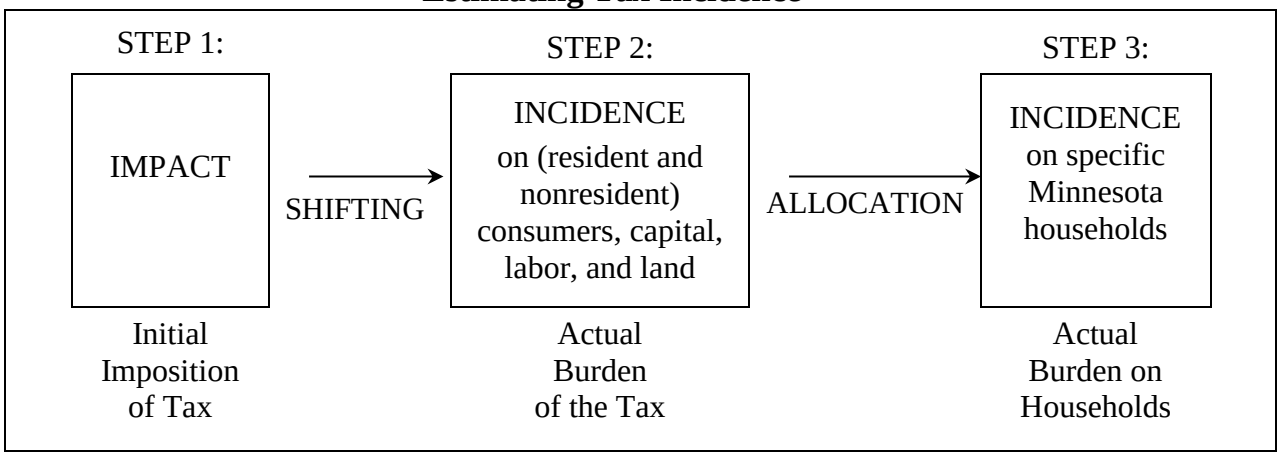
State		Local		State and Local	
Included		**Included**		**Included**	
Individual income tax	$10,032	Gross property taxes (after credits)			
Corporate franchise tax	1,381	Homestead property taxes	$3,596		
Estate tax	161	Property taxes on residential recreational property taxes (cabins)	193		
General sales and use tax	5,438	Rental property taxes (residential)	1,027		
Motor vehicle sales tax	668	Other business property taxes (including farming and taconite)	3,075		
Motor fuels excise taxes	888				
Alcoholic beverage excise taxes	85	Subtotal	$7,891		
Cigarette & tobacco excise taxes	657				
Insurance premiums tax	440	Local sales taxes	382		
Gambling taxes	47	Gross earnings taxes	142		
MinnesotaCare taxes	540				
Motor vehicle registration tax	669				
Mortgage and deed taxes	194				
Waste taxes	77				
State property tax	847				
Property tax refunds	(588)				
Total	$21,535	**Total**	$8,416	**Total**	$29,951
Omitted		**Omitted**		**Omitted**	
Controlled substances tax		Wheelage taxes			
Airflight property tax		Wind energy production tax			
Aircraft registration tax		Aggregate material production tax			
Rural electric cooperatives tax		Auxiliary forest tax			
Metropolitan solid waste landfill fee		Contamination tax			
Contamination tax		Severed mineral interests tax			
		Unmined taconite tax			
Total	$17	**Total**	$51	**Total**	$68
Total Tax Collections	$21,552		$8,467		$30,019

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

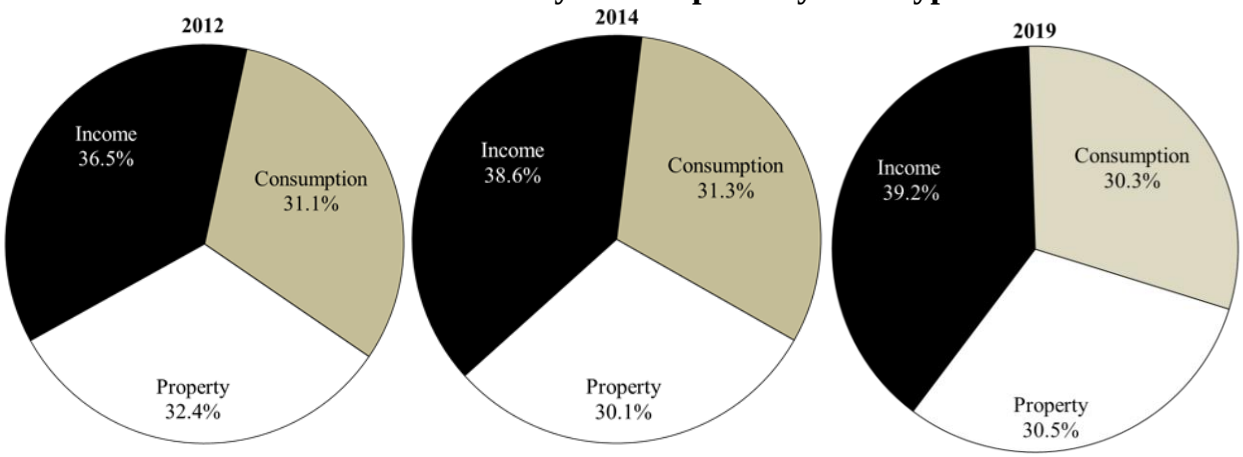


Each of the three steps shown in *Figure 1-1* is discussed separately below. The major findings from this study are reviewed in the context of the three-step estimating process.

Step 1 – Impact

Figure 1-2, derived from *Tables 1-2* and *1-3*, describes the revenues actually collected in 2012 and 2014 and expected to be collected in 2019. Taxes are divided into three general categories: Income, Consumption, and Property.[6]

Figure 1-2
Minnesota Tax System Impacts by Tax Type



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

The three graphs in *Figure 1-2* show that the income tax share rose in 2014 and is expected to continue to rise through 2019. The property tax share fell significantly between 2012 and 2014, but it is expected to rise through 2019. These swings in tax shares are due primarily to the economic recovery but partly to law changes.

- Total household income grew 7.3 percent between 2012 and 2014. In contrast, income is expected to grow by 23 percent between 2014 and 2019 (an average of 4.2 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 18 percent between 2012 and 2014, but enactment of the new top income tax bracket accounts for that large increase. Revenue from the individual income tax is expected to rise by 25 percent – faster than income – between 2014 and 2019.
- Taxes on consumption (sales and excise taxes) are generally less responsive to changes in income. Consumption tax revenue rose by 7.3 percent between 2012 and 2014 (matching income growth) and is projected to rise by 16 percent – slower than income – between 2014 and 2019.
- 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 also 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 only 2.4 percent between 2012 and 2014, well below the growth of income. They are projected to rise by 21 percent – still slower than income – between 2014 and 2019.

Another way of looking at Minnesota's tax system is to consider how tax revenues are split between state and local taxes. Between 2012 and 2014, the state's share rose from 70.3 percent to 71.9 percent. By 2019, it is expected to fall to 71.2 percent. The local share (including school taxes) fell from 29.7 percent in 2012 to 28.1 percent in 2014 and is expected to rise to 28.8 percent by 2019. Although local tax revenue is projected to rise 23 percent between 2014 and 2019, state tax revenue is projected to rise 18 percent.

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

Table 1-2
2014 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		
State Taxes						
Taxes on Income and Estates						
Individual income tax	$10,032	33.5%	94.3%	5.7%		100.0%
Corporation franchise tax [1]	1,381	4.6%			100.0%	100.0%
Estate tax	161	0.5%	100.0%			100.0%
Total Income and Estate Taxes	$11,574	38.6%	83.1%	4.9%	11.9%	100.0%
Taxes on Consumption						
Total sales tax	$6,106	20.4%	48.5%	5.0%	46.5%	100.0%
General sales/use tax	5,438	18.2%	47.5%	5.6%	46.9%	100.0%
Sales tax on motor vehicles	668	2.2%	56.9%		43.1%	100.0%
Motor fuels excise taxes	888	3.0%	47.5%	5.6%	46.9%	100.0%
Alcoholic beverage excise taxes	85	0.3%	86.0%	14.0%		100.0%
Cigarette and tobacco excise taxes	657	2.2%	100.0%	0.0%		100.0%
Insurance premiums taxes	440	1.5%	71.4%		28.6%	100.0%
Gambling taxes	47	0.2%	99.0%	1.0%		100.0%
MinnesotaCare taxes	540	1.8%	91.6%	8.4%		100.0%
Solid waste management taxes	77	0.3%	46.3%		53.7%	100.0%
Total Consumption Taxes	$8,839	29.5%	56.6%	4.6%	38.7%	100.0%
Taxes on Property						
State Property Tax	$847	2.8%	3.9%	1.0%	95.2%	100.0%
Residential recreational property	41	0.1%	80.2%	19.8%		100.0%
Commercial [2]	552	1.8%			100.0%	100.0%
Industrial	154	0.5%			100.0%	100.0%
Utility	100	0.3%			100.0%	100.0%
Motor vehicle registration tax	669	2.2%	83.8%		16.2%	100.0%
Mortgage and deed taxes	194	0.6%	47.7%		52.3%	100.0%
Total Property Taxes	$1,710	5.7%	40.1%	0.5%	59.4%	100.0%
Property Tax Refunds						
Homeowners	-$378	-1.3%	100.0%			100.0%
Renters	-211	-0.7%	100.0%			100.0%
Total Property Tax Refunds	-$588	-2.0%	100.0%			100.0%
Total State Taxes	$21,535	71.9%	68.4%	4.6%	27.0%	100.0%
Local Taxes						
Taxes on Property	$7,891	26.3%	47.5%	0.5%	52.0%	100.0%
General Property Tax	7,789	26.0%	48.2%	0.5%	51.3%	100.0%
Homeowners (before PTR)	3,596	12.0%	100.0%			100.0%
Residential recreational property	193	0.6%	80.2%	19.8%		100.0%
Commercial [2]	1,600	5.3%			100.0%	100.0%
Industrial	446	1.5%			100.0%	100.0%
Farm (other than residence) [3]	629	2.1%			100.0%	100.0%
Rental Housing (before PTR)	1,027	3.4%			100.0%	100.0%
Utility	297	1.0%			100.0%	100.0%
Mining Production Taxes (taconite)	102	0.3%			100.0%	100.0%
Taxes on Consumption						
Local Sales Taxes	382	1.3%	47.5%	5.6%	46.9%	100.0%
Local Gross Earnings Taxes	142	0.5%			100.0%	100.0%
Total Local Taxes	$8,416	28.1%	46.7%	0.7%	52.6%	100.0%
Total State and Local Taxes	$29,951	100.0%	62.3%	3.5%	34.2%	100.0%

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes timber.

Table 1-3
2019 State and Local Tax Collections by Type of Tax and Taxpayer Category

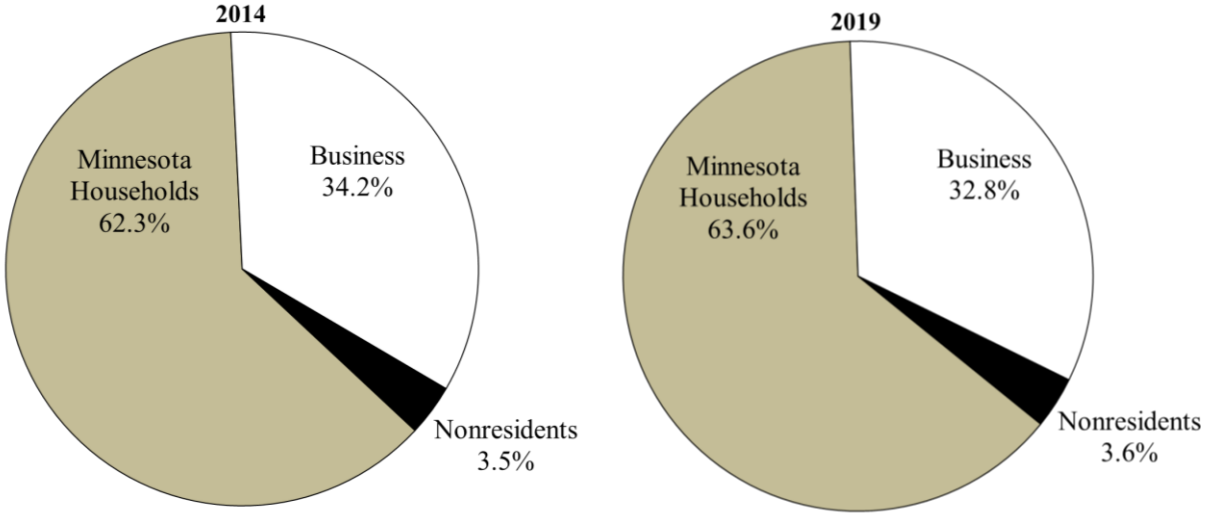
Tax Type	Collections		Percentage by Taxpayer Category			
	Total ($ Millions)	Percent Distribution	Households		Business	Total
			Resident	Nonresident		
State Taxes						
Taxes on Income and Estates						
Individual income tax	$12,561	35.1%	94.3%	5.7%		100.0%
Corporation franchise tax [1]	1,318	3.7%			100.0%	100.0%
Estate tax	164	0.5%	100.0%			100.0%
Total Income and Estate Taxes	$14,044	39.2%	85.5%	5.1%	9.4%	100.0%
Taxes on Consumption						
Total sales tax	$7,191	20.1%	48.6%	4.9%	46.5%	100.0%
General sales/use tax	6,328	17.7%	47.5%	5.6%	46.9%	100.0%
Sales tax on motor vehicles	864	2.4%	56.9%		43.1%	100.0%
Motor fuels excise taxes	924	2.6%	47.5%	5.6%	46.9%	100.0%
Alcoholic beverage excise taxes	93	0.3%	86.0%	14.0%		100.0%
Cigarette and tobacco excise taxes	659	1.8%	100.0%	0.0%		100.0%
Insurance premiums taxes	501	1.4%	71.4%		28.6%	100.0%
Gambling taxes	68	0.2%	99.0%	1.0%		100.0%
MinnesotaCare taxes	697	1.9%	91.6%	8.4%		100.0%
Solid waste management taxes	88	0.2%	46.3%		53.7%	100.0%
Total Consumption Taxes	$10,221	28.5%	56.5%	4.7%	38.8%	100.0%
Taxes on Property						
State Property Tax	$906	2.5%	3.9%	1.0%	95.2%	100.0%
Residential recreational property	44	0.1%	80.2%	19.8%		100.0%
Commercial [2]	583	1.6%			100.0%	100.0%
Industrial	169	0.5%			100.0%	100.0%
Utility	111	0.3%			100.0%	100.0%
Motor vehicle registration tax	806	2.3%	83.8%		16.2%	100.0%
Mortgage and deed taxes	249	0.7%	47.7%		52.3%	100.0%
Total Property Taxes	$1,961	5.5%	42.3%	0.4%	57.3%	100.0%
Property Tax Refunds						
Homeowners	-$480	-1.3%	100.0%			100.0%
Renters	-240	-0.7%	100.0%			100.0%
Total Property Tax Refunds	-$720	-2.0%	100.0%			100.0%
Total State Taxes	$25,506	71.2%	70.2%	4.7%	25.1%	100.0%
Local Taxes						
Taxes on Property	$9,683	27.0%	48.2%	0.5%	51.3%	100.0%
General Property Tax	9,574	26.7%	48.8%	0.5%	50.8%	100.0%
Homeowners (before PTR)	4,482	12.5%	100.0%			100.0%
Residential recreational property	232	0.6%	80.2%	19.8%		100.0%
Commercial [2]	1,861	5.2%			100.0%	100.0%
Industrial	540	1.5%			100.0%	100.0%
Farm (other than residence) [3]	669	1.9%			100.0%	100.0%
Rental Housing (before PTR)	1,399	3.9%			100.0%	100.0%
Utility	391	1.1%			100.0%	100.0%
Mining Production Taxes (taconite)	109	0.3%			100.0%	100.0%
Taxes on Consumption						
Local Sales Taxes	473	1.3%	47.5%	5.6%	46.9%	100.0%
Local Gross Earnings Taxes	156	0.4%			100.0%	100.0%
Total Local Taxes	$10,312	28.8%	47.4%	0.7%	51.8%	100.0%
Total State and Local Taxes	$35,817	100.0%	63.6%	3.6%	32.8%	100.0%

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Farm includes timber.

Figure 1-3 shows that business taxes accounted for 34.2 percent of total state and local taxes in 2014 up from 33.2 percent in 2012. That share is expected to fall to 32.8 percent in 2019.

Total business taxes are projected to increase by 15 percent between 2014 and 2019, but individual taxes are projected to increase faster at 22 percent.

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



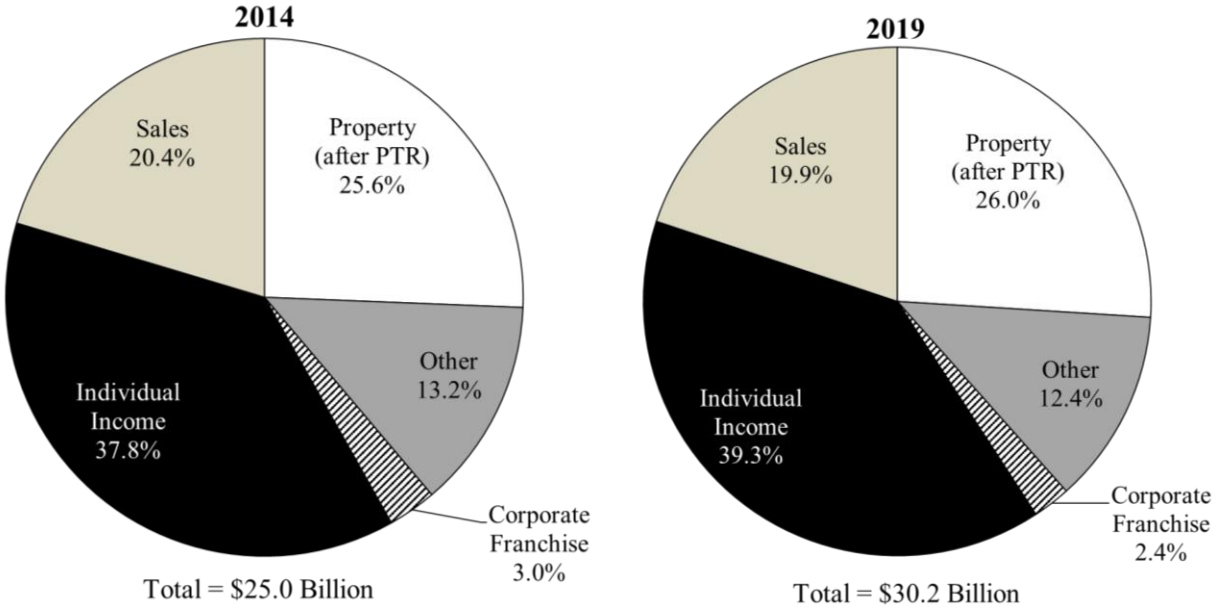
Step 2 – Shifting

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 2014 Minnesota households paid (either directly or indirectly through shifted business tax) a total of $25.0 billion in Minnesota state and local taxes. This equals 83.6 percent of total state and local tax collections ($30.0 billion). The other $4.9 billion (16.4 percent) is "exported" to nonresidents or visitors to the state. Between 2014 and 2019 the total burden on Minnesotans will rise by 20.5 percent (to $30.2 billion), increasing more slowly than income (projected to increase 22.6 percent), so the tax burden as percent of income will fall from 12.0 percent to 11.8 percent.

Between 2014 and 2019, the individual income tax share of the burden on Minnesota households is projected to increase from 37.8 percent to 39.3 percent. The share of property tax (after PTR) rises from 25.6 percent to 26.0 percent. The shares of sales taxes, corporate tax, and other taxes all fall.

Figure 1-4
Tax Incidence After Shifting



Step 3 – Allocation to Specific Households

Step 3 combines the incidence assumptions from Step 2 with information on the income and characteristics of individuals to estimate the tax burden falling on each of Minnesota's 2.66 million households.[7] 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.

[7] 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 (2,660,914 in 2014) exceeds the number of households reported by the Census (2,129,193). A more detailed comparison is provided in the last section of *Chapter 5*.

The Suits index has numerical properties that make it easy to identify the degree of progressivity or regressivity of a tax. A proportional tax has a Suits index equal to zero; a progressive tax has a positive index number in the range between 0 and +1. In the extreme case, if the total tax burden were paid by the richest household, the index would be a value of +1. For a regressive tax, the Suits index has a negative value between 0 and -1, with -1 being the most regressive value.

Table 1-4 presents full-sample Suits indexes for selected Minnesota state and local tax categories in 2014 and 2019. 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 2014 (a full-sample Suits index of -0.029). State taxes were progressive (+0.032), and local taxes were regressive (-0.189).

Between 2014 and 2019, Minnesota's overall Suits index is expected to rise (moving toward zero) from -0.029 to -0.024. The income tax becomes less progressive in 2019, but its share of the total tax burden also grows (as seen above in *Figure 1-4*). As a result, individual taxes become slightly more progressive in 2019.

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

Tax Category	2014 Suits Index	2019 Suits Index
Personal Income Tax	+0.258	+0.235
Sales Taxes (State & Local)	-0.247	-0.231
Business Taxes	-0.193	-0.188
Individual Taxes	+0.027	+0.028
All State Taxes	+0.032	+0.040
All Local Taxes	-0.189	-0.188
Total Taxes	-0.029	-0.024

Effective Tax Rates by Decile

For analytical purposes, Minnesota's households are divided into ten equal groups, or deciles. Each of these ten population deciles includes 10 percent of all households. The bottom (1st) decile includes the tenth with lowest incomes; the top (10th) 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).[8]

[8] 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.

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

As *Table 1-5* shows, Minnesota's state and local tax system is somewhat progressive between the lower and middle deciles and somewhat regressive between the middle and upper deciles. For 2014, effective tax rates rose from a low of 11.5 percent of income in the 4th decile to between 12.1 and 12.4 percent in the 5th to 8th deciles, but then falls to 11.9 percent in the 9th decile and 11.5 percent in the 10th decile.[9]

Between 2014 and 2019, effective tax rates are projected to fall in every decile except the 9th, with a small increase of 0.03 percent of income.

As shown in *Table 1-5*, Minnesota residents paid an estimated 12.0 percent of their 2014 total income in state and local taxes. Under current law (and with the November 2016 economic forecast), this is expected to fall to 11.8 percent in 2019. For 2014, the effective tax rate was 8.7 percent for state taxes and 3.3 percent for local taxes. Between 2014 and 2019, the effective state tax rate is projected to fall by 0.2 percentage points and the effective local tax rate is projected to remain unchanged.

Table 1-5
Minnesota Effective Tax Rates for 2014 and 2019[1]
State and Local Taxes by Population Decile

Population Decile	2014			2019		
	State	Local	Total	State	Local	Total
First	18.1%	11.9%	29.9%	14.5%	11.6%	26.1%
Second	8.5%	5.4%	13.9%	7.2%	5.4%	12.6%
Third	7.1%	4.8%	11.9%	6.5%	4.9%	11.4%
Fourth	7.2%	4.3%	11.5%	6.9%	4.4%	11.3%
Fifth	7.8%	4.3%	12.1%	7.6%	4.4%	11.9%
Sixth	8.0%	4.2%	12.3%	7.8%	4.4%	12.2%
Seventh	8.3%	4.0%	12.4%	8.2%	4.1%	12.3%
Eighth	8.5%	3.7%	12.2%	8.4%	3.7%	12.0%
Ninth	8.6%	3.3%	11.9%	8.5%	3.4%	12.0%
Tenth	9.1%	2.4%	11.5%	9.0%	2.3%	11.3%
Total	8.7%	3.3%	12.0%	8.5%	3.3%	11.8%

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

[9] The income ranges for each population decile are shown in *Table 2-2* (for 2014) and *Table 3-2* (for 2019).

As shown in *Figure 1-5*, state tax burdens and local tax burdens are distributed quite differently. Total state taxes for 2014 (individual and business combined) were progressive with effective tax rates rising continuously from 7.1 percent in the 3rd decile to 8.6 percent in the 9th decile and 9.1 percent in the 10th 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.

Between 2014 and 2019, reductions in effective state tax rates are greatest in the 1st, 2nd, and 3rd deciles. Effective tax rates for local taxes, in contrast, are mixed, with small reductions in two deciles and small increases in six deciles.

Figure 1-5
Effective Tax Rates for 2014 and 2019
State and Local Taxes by Population Decile

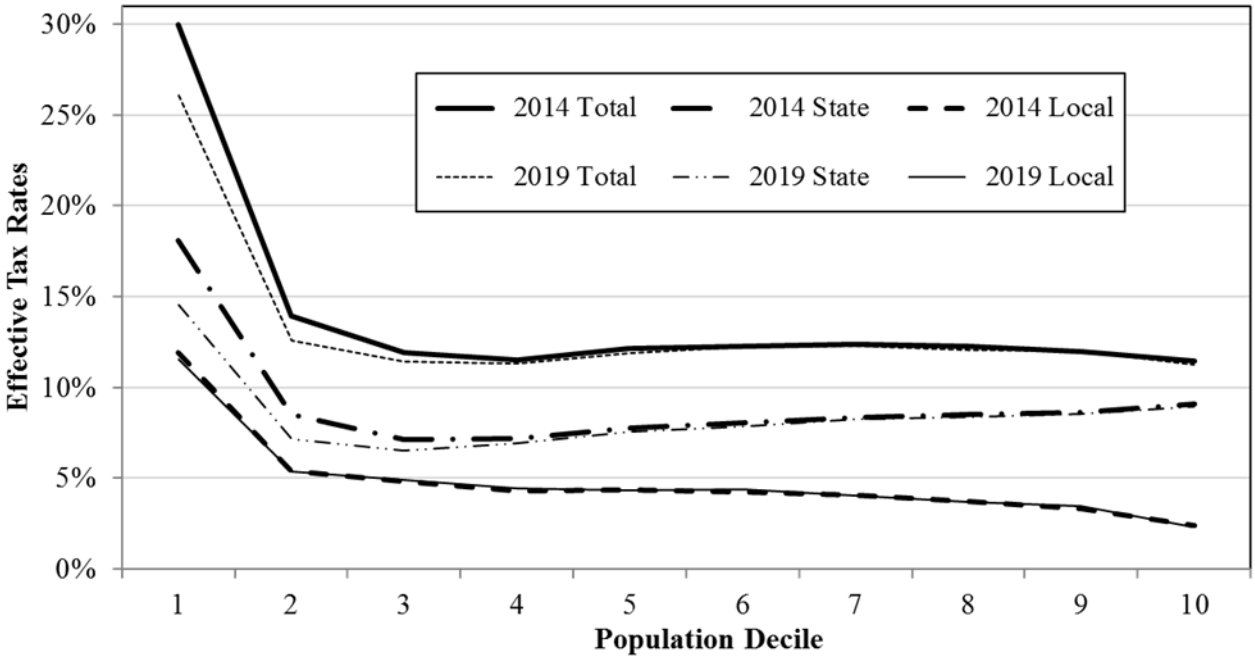


Table 1-6 and *Figure 1-6* show that the patterns of effective rates for taxes paid by individuals versus businesses are also quite different. For 2014, effective rates for taxes paid by individuals increased from 6.3 percent of income in the 3rd decile to 9.3 percent in the 8th decile, and then declined to 9.2 percent in the 10th decile.

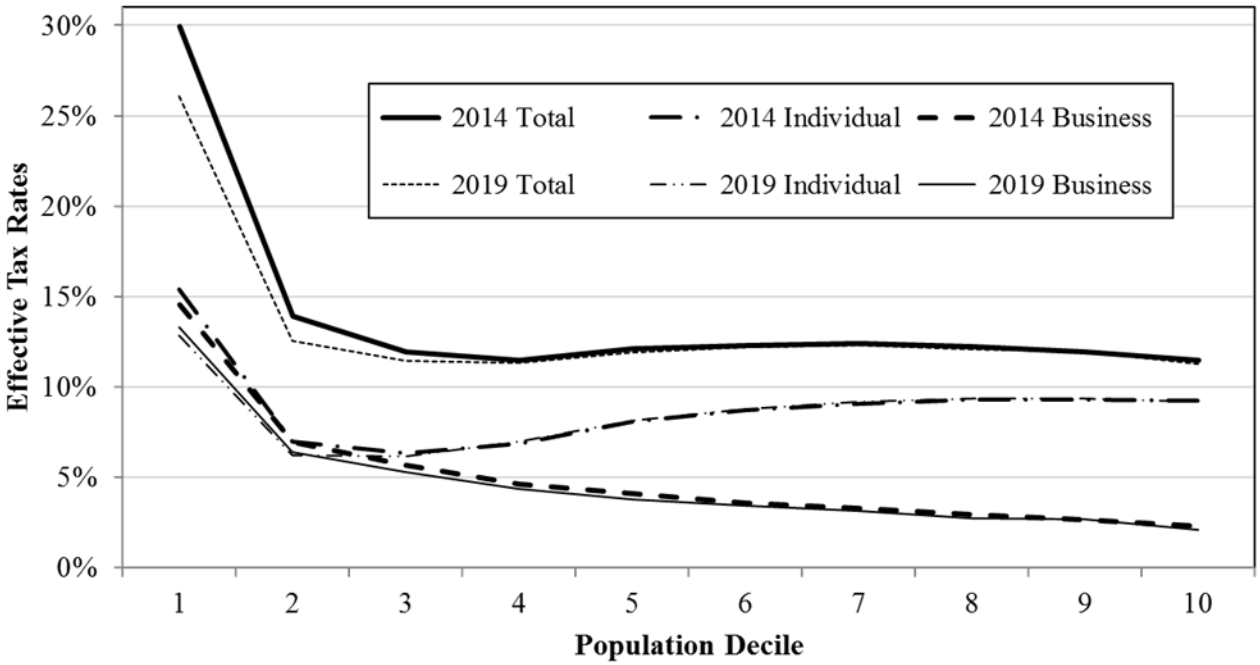
In contrast, Minnesota state and local taxes on businesses (after shifting) are regressive, with effective tax rates for 2014 falling from 6.9 to 2.3 percent of income between the 2nd and 10th deciles. The overall effective rate for taxes on businesses after shifting was 3.1 percent and on individuals was 9.0 percent in 2014. Between 2014 and 2019, effective tax rates for individual taxes fall in the first three deciles, but rise in the 5th, 6th, and 8th deciles. Effective tax rates for business taxes fall (before rounding) in every decile.

Table 1-6
Minnesota Effective Tax Rates for 2014 and 2019[1]
Individual and Business Taxes by Population Decile

Population Decile	2014			2019		
	Individual	Business	Total	Individual	Business	Total
First	15.4%	14.5%	29.9%	12.8%	13.3%	26.1%
Second	7.0%	6.9%	13.9%	6.2%	6.4%	12.6%
Third	6.3%	5.6%	11.9%	6.1%	5.3%	11.4%
Fourth	6.9%	4.6%	11.5%	6.9%	4.4%	11.3%
Fifth	8.0%	4.1%	12.1%	8.1%	3.8%	11.9%
Sixth	8.7%	3.6%	12.3%	8.8%	3.4%	12.2%
Seventh	9.1%	3.3%	12.4%	9.1%	3.1%	12.3%
Eighth	9.3%	2.9%	12.2%	9.4%	2.7%	12.0%
Ninth	9.3%	2.6%	11.9%	9.3%	2.6%	12.0%
Tenth	9.2%	2.3%	11.5%	9.2%	2.1%	11.3%
Total	9.0%	3.1%	12.0%	8.9%	2.9%	11.8%

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

Figure 1-6
Effective Tax Rates for 2014 and 2019
Individual and Business Taxes by Population Decile



Effective Tax Rates in the 1st Decile

As shown in *Table 1-5*, the total 2014 effective tax rate of 29.9 percent for taxpayers in the 1st decile is much higher than the rates in other deciles.

The effective tax rate for the 1st 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 2014. A portion of retirees, for example, may be living primarily on savings or other assets but report small amounts of annual money income received. Due to unemployment or business fluctuations, some households who normally have higher incomes are also included in the first decile. A small portion of all first-decile households were in this decile only because they reported business losses or large capital losses for income tax purposes in 2014.

Second, effective tax rates for the 1st decile are overstated because income is understated. The incidence sample was unable to identify all sources of income. Many first-decile households filed neither an income tax nor a property tax refund return. The Incidence Study identified some other sources of income for these households, but many had additional sources of income that were not identified. An underestimate of household income generally causes effective tax rates to be overestimated.

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

While this study does adjust for negative incomes for a small number of households, no attempt has been made to adjust for possible underreported or unidentified sources of income or for other differences between transitory and long-run measures of income. By including only money income, the substantial amounts of food stamps and housing subsidies received by the poor are ignored in this study. Consequently, money income at the low end of the income distribution does not provide an accurate measure of overall economic well-being. For all of these reasons, effective tax rates in the 1st decile are overstated by an unknown but possibly significant amount.

If the 1st decile were excluded, the full-sample Suits index for 2014 would rise from -0.029 to -0.017 – still regressive.[10]

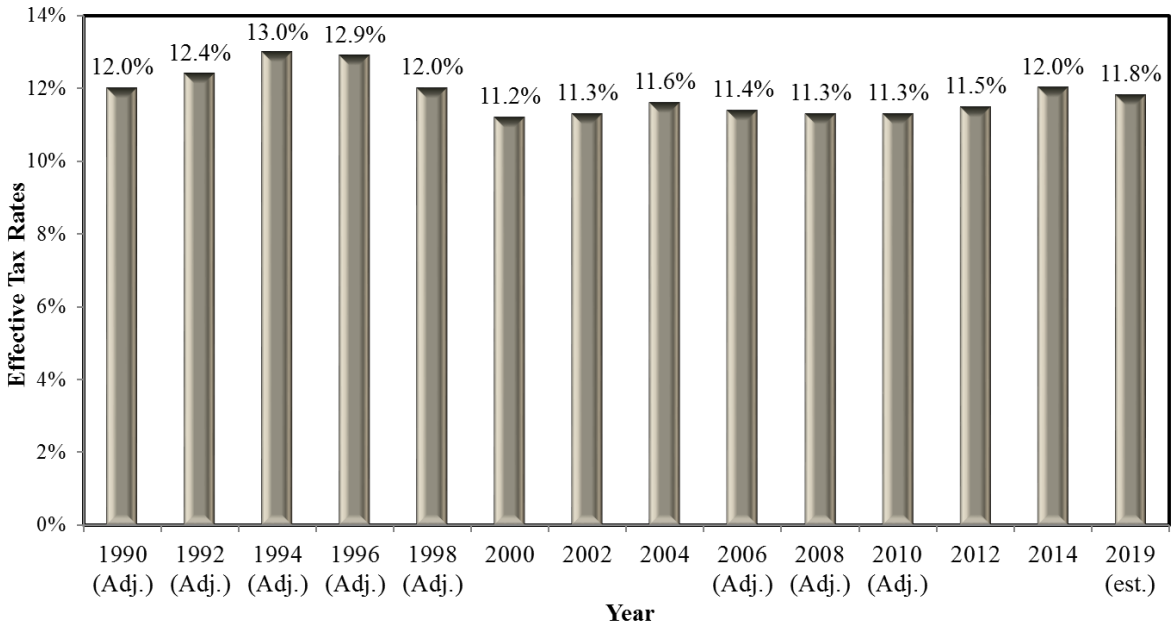
[10] The overall regressivity is more the result of the lower effective tax rate for the top decile. If both the 1st and 10th deciles were excluded, the full-sample Suits index would rise to -0.005 – close to proportional.

Historical Comparison with Earlier Studies

Incidence data has been collected and published in a series of studies, of which this is the fourteenth. 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 1990's, the slowdown of the early 1990's, the contraction from 2000 to 2002, solid growth between 2002 and 2008, recession in 2010, and recovery in 2012 and 2014.

As shown in *Figure 1*-7, effective tax rates over the period 1990–2012 first rise but then fall and remain well below those of the 1990's. The effective tax rate for the tax system as a whole was 12.0 percent in 1990. Effective tax rates rose to 13.0 percent just four years later in 1994, before beginning a sustained decline to 11.2 percent in 2000. The decline through 2000 was attributable partly to tax cuts and partly to income growth, especially in the late 1990's, that outstripped tax collections (see *Table 1-7*). As the economy emerged from recession after 2002, the effective tax rate rose to 11.6 percent in 2004, and remained fairly constant (11.3 to 11.5 percent) through 2012. It rose to 12.0 percent in 2014 but is projected to fall back to 11.8 percent in 2019.

Figure 1-7
Effective Tax Rates, All Minnesota Taxes[11]



[11] 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 1-7* and *Figure 1-8*. The tax system was essentially proportional in 1990, with a population-decile Suits index near zero. The population-decile Suits index fell from -0.017 in 1992 to a low of -0.040 in 1998. It rebounded somewhat in succeeding years, reaching -0.018 in 2002 and -0.024 in 2004. It dropped significantly below those levels in more recent years, to -0.059 in 2006, -0.050 in 2008, -0.053 in 2010, and -0.045 in 2012, before rising to -0.028 in 2014. Under current law, though, it is projected to fall to -0.025 in 2019.

Table 1-7 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 1-7
Households, Household Income, Total Taxes, Effective Tax Rates, and Suits Indexes, All Taxes, 1990-2019

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
2019 (est.)	2,776,011	255,330,219	35,817,000	99.8%	30,172,201	11.8%	-0.025	-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%
2014-2019 (est.)	4.3%	22.6%	20.5%

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

Figure 1-8
Suits Indexes, All Minnesota Taxes 1990-2019[12]

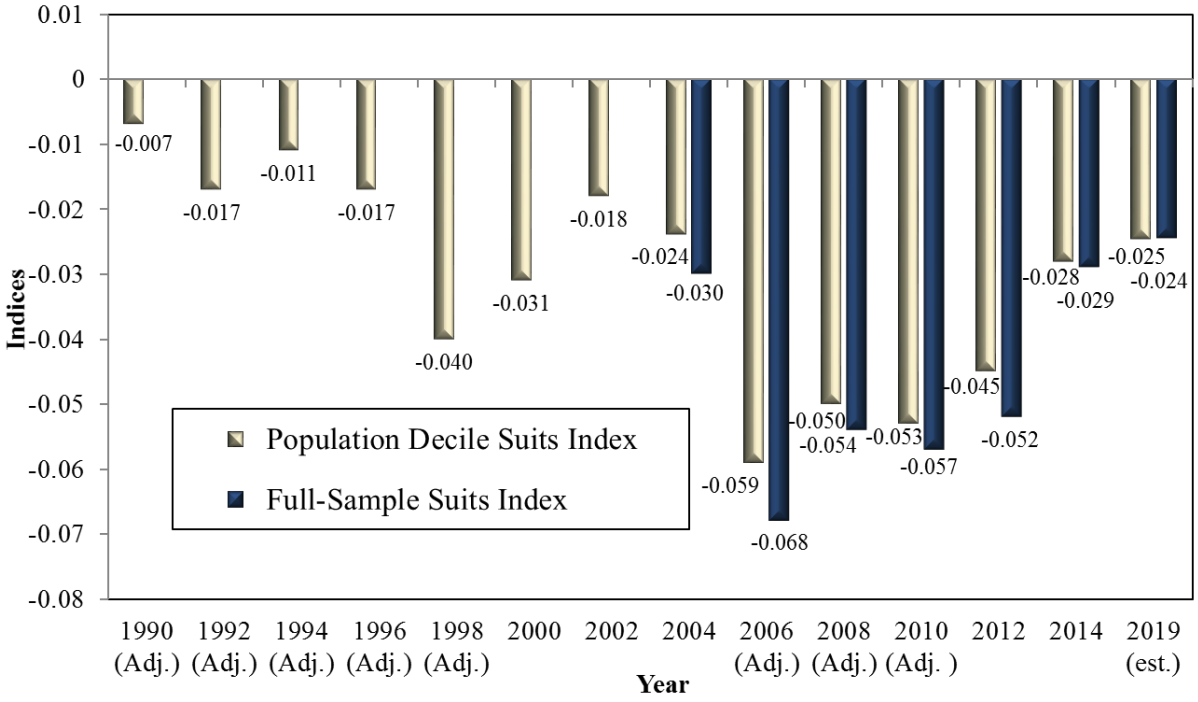


Table 1-8 shows effective tax rates by decile for each incidence study year. It is interesting to compare the pattern of effective tax rates in 1990 and 1992 with those for more recent years. *Figure 1-9* compares effective tax rates in 1992 and 2014. In 1992, effective tax rates were virtually the same for deciles 2 through 10. All were between 11.9 percent and 12.3 percent. Moreover, the tax rate was only slightly lower for the top 1 percent (at 11.6 percent of income).

The pattern has been quite different in more recent years, including 2014:

- The lower deciles (3 and 4) have effective tax rates significantly lower than the average for deciles 5 through 8.
- Effective tax rates drop between the ninth and tenth 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. In 2014, the difference fell to 0.4 percentage points, the smallest difference since 1994. In 2019, though, it is expected to rise to 0.7 percentage points.

Each of these two patterns has been found consistently in recent studies, regardless of the point in the business cycle. The lower rates in the 3rd and 4th deciles reflect the increased role of refundable income tax credits and property tax refunds.

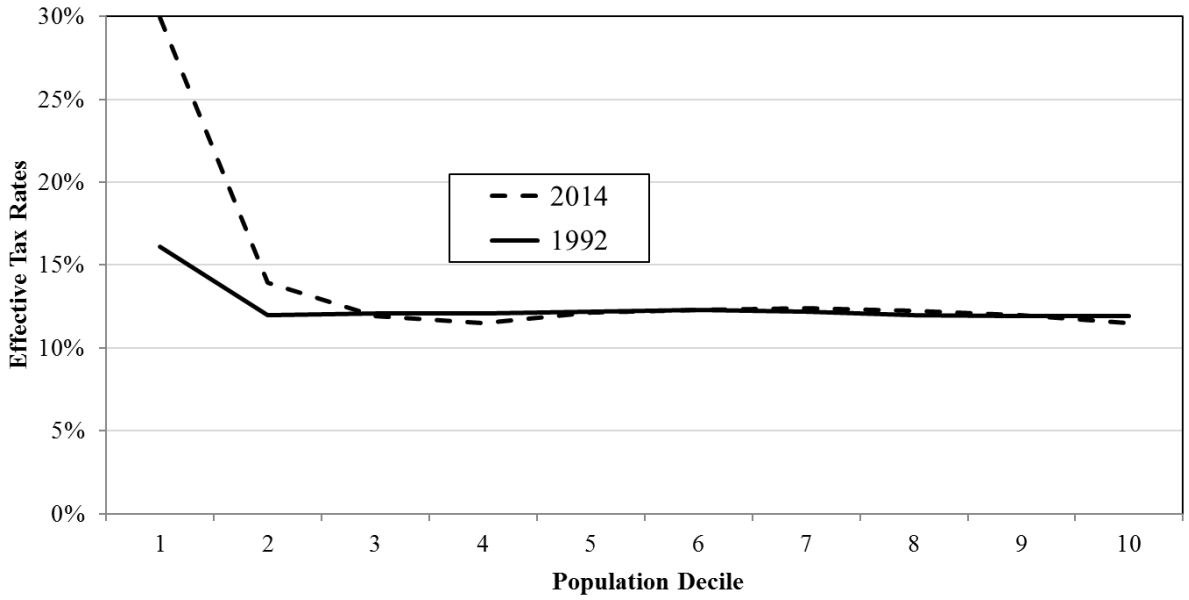
[12] For an explanation of these adjustments, see footnote 3 on page 3.

The pattern of lower effective tax rates in the 3rd and 4th 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.

Table 1-8
Effective Tax Rates by Population Decile
All Taxes, 1990–2019

Decile	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2019 (est.)
First	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%	26.1%
Second	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%	12.6%
Third	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%	11.4%
Fourth	11.3%	12.1%	12.8%	12.5%	12.0%	11.1%	11.0%	11.5%	11.9%	11.5%	11.3%	11.3%	11.5%	11.3%
Fifth	11.1%	12.2%	12.8%	13.0%	12.1%	11.5%	11.4%	11.9%	12.7%	11.8%	11.8%	11.8%	12.1%	11.9%
Sixth	11.8%	12.3%	13.2%	13.1%	13.1%	12.3%	11.9%	12.2%	12.4%	12.0%	12.1%	12.1%	12.3%	12.2%
Seventh	12.0%	12.2%	13.0%	13.1%	12.9%	12.0%	12.0%	12.3%	12.3%	11.8%	11.9%	11.9%	12.4%	12.3%
Eighth	11.9%	12.0%	13.0%	13.0%	12.9%	12.0%	11.8%	12.3%	12.0%	11.9%	11.8%	11.8%	12.2%	12.0%
Ninth	11.8%	11.9%	13.0%	13.0%	12.5%	11.9%	11.7%	12.3%	11.8%	11.5%	11.5%	11.5%	11.9%	12.0%
Tenth	11.7%	11.9%	12.6%	12.2%	10.6%	10.3%	10.7%	10.9%	10.1%	10.2%	10.2%	10.2%	11.5%	11.3%
Total	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%	11.8%
Top 5%	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%	11.2%
Top 1%	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%	11.4%

Figure 1-9
Effective Tax Rates for 1992 and 2014
By Population Decile



Although the historical changes in the degree of regressivity are due partly to changes in tax laws, the role of the business cycle may be even more important. During the past two decades, income inequality has generally risen during times of rapid growth and fallen during economic contractions. The years of greatest regressivity (1998, 2000, and 2006-2012) were years when the distribution of income was most unequal, due in some years to unusually high capital gains income. As shown in *Figure 1-10*, the income share of the top 5 percent and top 1 percent of Minnesota households was unusually high in those years. In 1998 and 2000, the top 5 percent of households accounted for 31.4 percent of total household income, up from an average of only 26.4 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. It remains high in 2014 (31.7 percent) and 2019 (31.0 percent).

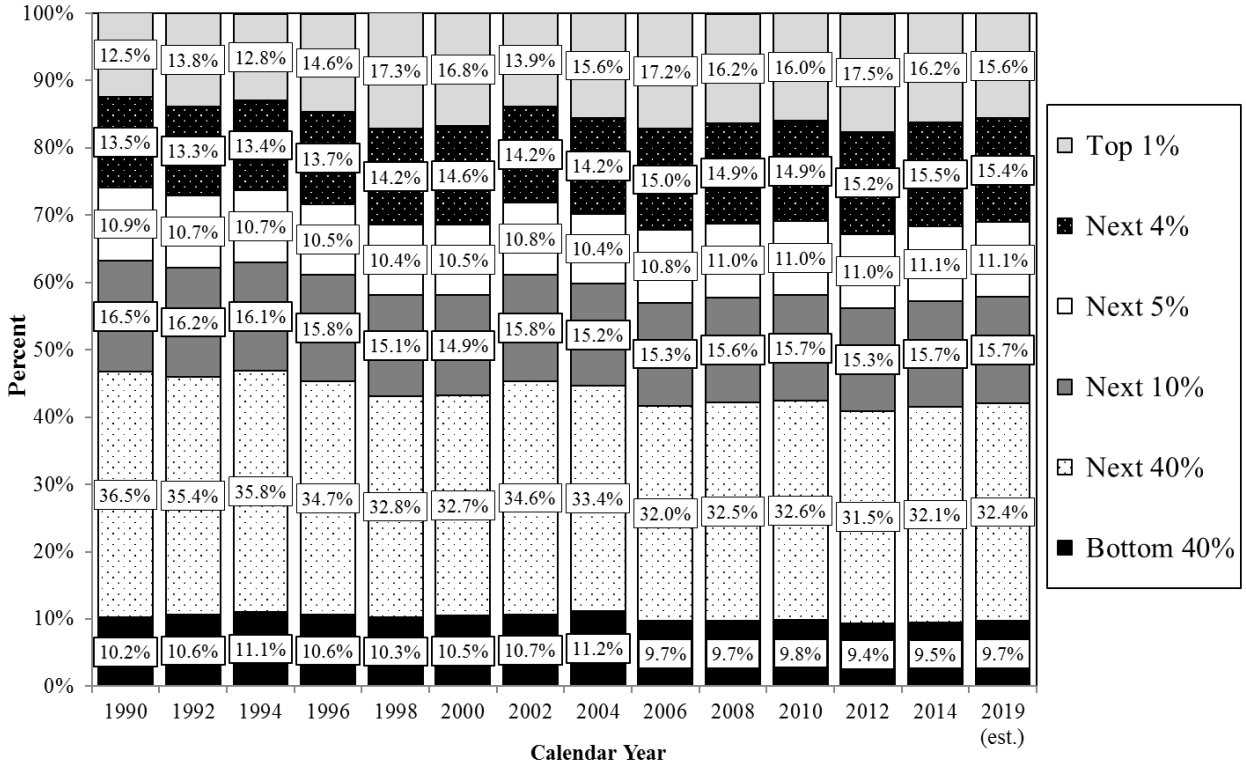
The pattern is similar for the share of income received by the top 1 percent of Minnesota households. In 1998 and 2000, the top 1 percent received 17 percent of total income, up from an average of 13.4 percent in the earlier study years. After a drop to 13.9 percent in 2002, the share of the top 1 percent 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. It remains high (at over 16 percent) in 2014, but is projected to fall to 15.6 percent in 2019.

This concentration of income by itself, with no change in tax law, will increase the measured regressivity of the tax system. Lower regressivity in earlier recession years (such as 2002) partly reflected the 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 richest Minnesotans.[13]

The income share of the bottom 40 percent dropped below 10 percent in 2006 for the first time since these studies began. It remains below 10 percent in 2014 (at 9.5 percent) and 2019 (at 9.7 percent).

[13] 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.

Figure 1-10
Shares of Household Income



Tax policy can certainly affect the degree of regressivity, but it is difficult to identify tax changes that are large enough to move the Suits index by as much as it has moved 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 explain very little of the reduction in regressivity between 2014 and the projected year 2019. Instead, it mostly reflects a forecast that includes much faster growth in wage income than in capital income. The income share of the top one percent and top five percent is forecast to fall to levels not seen since 2004.

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Chapter 2: Principal Results, 2014

This chapter examines the state and local tax burdens imposed on Minnesota taxpayers in 2014. 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 2014.

Only Minnesota taxes paid by residents are included in the analysis below; Minnesota taxes paid by nonresidents and taxes Minnesota residents pay to the federal government or to other states are excluded. For business taxes, the study estimates the extent to which they are shifted forward to Minnesota consumers (in higher prices), shifted backward to Minnesota workers (in lower wages), or borne by owners of capital (in lower rates of return).

Total Tax Burden

For 2014, Minnesota residents paid a total of $25.0 billion in Minnesota state and local taxes while receiving $208.2 billion in total money income.[14] Minnesota residents thus paid 12.0 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 $30.0 billion in total tax collections in 2014, $25.0 billion (83.6 percent) of the total burden falls on Minnesotans, directly or indirectly. The other 16.4 percent ($5.0 billion) is exported to nonresident consumers and owners of capital.

As shown in the "as imposed" columns of the table, $18.7 billion (62 percent) of the total tax is imposed directly on Minnesota households. Another $1.1 billion (4 percent) is paid by out-of-state visitors. The remaining $10.2 billion (34 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 the *Appendix B*.)

[14] Total money income includes all cash income, whether taxable or nontaxable. It includes nontaxable social security, interest, and retirement income, nontaxable workers' compensation payments, and cash payments from the Minnesota Family Investment Program (MFIP). Income excludes the value of fringe benefits and in-kind benefits such as food stamps, rent subsidies, and energy assistance. For a more complete description of the definition of household income, see *Appendix A* of this study.

Summary List

Table 2-1
2014 Tax Collection Amounts

Tax Type	Total ($ Millions)	As Imposed			After shifting		Full-Sample Suits Index
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	$10,032	$9,459	$573		$9,459	$573	0.258
Corporation franchise tax [1]	1,381			$1,381	759	622	-0.198
Estate tax	161	161			161		0.822
Total Income and Estate Taxes	$11,574	$9,620	$573	$1,381	$10,379	$1,195	0.233
Taxes on Consumption							
Total sales tax	$6,106	$2,963	$303	$2,840	$4,797	$1,309	-0.246
General sales/use tax	5,438	2,583	303	2,552	4,297	1,141	-0.259
Sales tax on motor vehicles	668	380		288	500	168	-0.139
Motor fuels excise taxes	888	422	50	417	542	346	-0.357
Alcoholic beverage excise taxes	85	73	12		73	12	-0.240
Cigarette and tobacco excise taxes	657	657	0		657	0	-0.512
Insurance premiums taxes	440	314		126	374	66	-0.318
Gambling taxes	47	46	0		46		-0.506
MinnesotaCare taxes	540	495	45		495	45	-0.330
Solid waste management taxes	77	36		41	71	6	-0.416
Total Consumption Taxes	$8,839	$5,005	$410	$3,424	$7,054	$1,785	-0.293
Taxes on Property							
State Property Tax	$847	$33	$8	$806	$455	$392	-0.162
Residential recreational property	41	33	8		33	8	-0.267
Commercial [2]	552			552	328	224	-0.154
Industrial	154			154	38	116	-0.018
Utility	100			100	57	44	-0.237
Motor vehicle registration tax	669	561		109	624	46	-0.210
Mortgage and deed taxes	194	92		101	166	28	0.012
Total Property Taxes	$1,710	$686	$8	$1,016	$1,245	$465	-0.163
Property Tax Refunds							
Homeowners	-$378	-$378			-$378		0.640
Renters	-211	-211			-211		0.879
Total Property Tax Refunds	-$588	-$588			-$588		0.725
Total State Taxes	$21,535	$14,723	$991	$5,821	$18,090	$3,445	0.032
Local Taxes							
Taxes on Property	$7,891	$3,751	$38	$4,102	$6,558	$1,334	-0.185
General Property Tax	7,789	3,751	38	4,000	6,548	1,241	-0.185
Homeowners (before PTR)	3,596	3,596			3,596		-0.175
Residential recreational property	193	155	38		155	38	-0.267
Commercial [2]	1,600			1,600	951	650	-0.154
Industrial	446			446	110	337	-0.018
Farm (other than residence) [3]	629			629	626	2	-0.100
Rental Housing (before PTR)	1,027			1,027	942	85	-0.310
Utility	297			297	168	129	-0.237
Mining Production Taxes (taconite)	102			102	10	92	0.283
Taxes on Consumption							
Local Sales Taxes	382	182	21	179	302	80	-0.259
Local Gross Earnings Taxes	142			142	80	62	-0.237
Total Local Taxes	$8,416	$3,933	$60	$4,423	$6,940	$1,476	-0.189
Total State and Local Taxes	$29,951	$18,656	$1,051	$10,244	$25,030	$4,921	-0.029

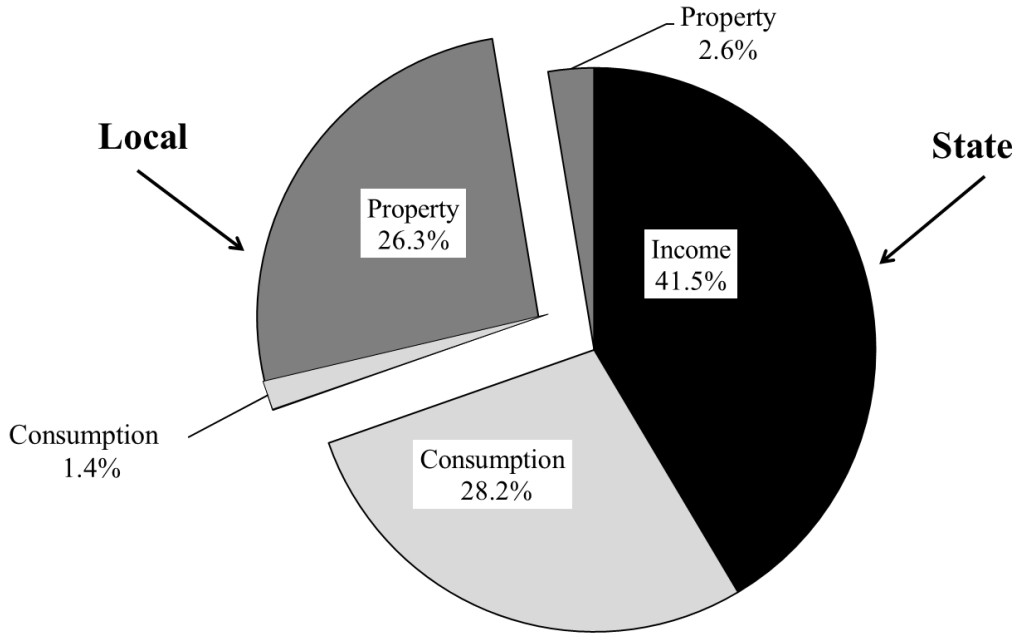
[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes timber.

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 94 percent of total collections. Minnesota residents bear a smaller share of the general sales tax burden (79 percent). At the other end of the scale, Minnesotans are estimated to bear only 25 percent of the burden of property taxes on industrial property. Minnesotans are estimated to bear 62 percent of the burden of the total tax imposed on business.

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. Over 72 percent of the total burden is from state taxes; less than 28 percent is from local taxes. By tax category, 41 percent of the burden is from taxes on income, 29 percent from taxes on property, and 30 percent from taxes on consumption.

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

Figure 2-1
2014 Distribution of State and Local Tax Burdens
By Type of Tax and Level of Government



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 1st decile includes the 10 percent of households with the lowest incomes and the 10th decile includes the 10 percent of households with the highest incomes. There were 266,091 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 $147,969 and over) bore 41 percent of the total tax burden while having 43 percent of total income. By tax type, taxpayers in the top decile paid 60 percent of the individual income tax, 25 percent of the consumer sales tax, 29 percent of the gross homeowner property tax (before property tax refunds), and 32 percent of business taxes.[15]

In contrast, taxpayers in the bottom decile (incomes of $11,262 and below) bore 2.1 percent of the total tax burden and received 0.9 percent of total income. The bottom-decile taxpayers had a negative net individual income tax burden due to refundable tax credits. First-decile households paid 4.0 percent of consumer sales taxes, 2.1 percent of gross homeowner property tax, and 4.1 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 12.0 percent. Effective tax rates rise from a low of 11.5 percent of income in the 4th decile to between 12.1 and 12.4 percent in the 5th to 8th deciles, but then fall to 11.9 percent in the 9th decile and 11.5 percent in the 10th decile. For the top 5 percent of households the effective tax rate is 11.3 percent, rising to 11.5 percent of income for the top 1 percent.

[15] 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.

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Table 2-2 2014 Population Deciles - Amounts ($ Thousands)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$11,262 & Under	266,091	$1,794,677	-$21,915	$27,671	$118,228	$75,073	$193,300	-$44,741	$17,131	$95,886	$46,398	$10,367
Second	$11,263 - $18,218	266,091	3,932,988	-43,186	32,139	148,313	83,100	231,413	-70,012	17,866	99,024	60,092	7,790
Third	$18,219 - $26,140	266,091	5,867,561	-10,918	37,874	170,463	95,686	266,149	-85,974	21,087	102,772	77,026	9,061
Fourth	$26,141 - $35,360	266,091	8,144,990	80,460	44,077	195,115	109,470	304,584	-84,960	24,808	107,865	96,868	10,301
Fifth	$35,361 - $46,141	266,091	10,782,586	246,449	51,298	220,468	125,816	346,284	-82,192	29,555	112,458	121,410	12,546
Sixth	$46,142 - $59,617	266,091	13,996,850	432,854	59,882	252,810	145,555	398,365	-81,652	34,413	118,140	146,240	15,097
Seventh	$59,618 - $77,665	266,091	18,160,067	659,624	73,012	301,733	175,364	477,097	-66,303	42,123	128,444	181,341	18,848
Eighth	$77,666 - $102,785	266,091	23,787,346	970,153	90,294	364,199	213,956	578,155	-53,741	52,832	140,845	220,598	23,782
Ninth	$102,786 - $147,968	266,091	32,608,520	1,501,761	112,830	441,350	260,499	701,850	-15,222	66,254	154,026	262,217	29,852
Tenth	$147,969 & Over	266,091	89,117,364	5,643,364	229,999	750,389	549,263	1,299,652	-3,478	148,905	212,013	493,332	94,142
TOTALS		2,660,914	$208,192,948	$9,458,645	$759,076	$2,963,068	$1,833,781	$4,796,849	-$588,275	$454,973	$1,271,473	$1,705,522	$231,786
Top 5%	Over $213,506	133,205	$66,036,823	$4,491,789	$157,007	$480,233	$382,860	$863,093	-$2,186	$106,257	$125,193	$340,505	$72,497
Top 1%	Over $512,192	26,617	$33,741,177	$2,613,912	$68,440	$183,485	$177,037	$360,522	-$809	$52,168	$40,661	$193,092	$42,070

Population Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total [1]	Nonresidential Local Property Taxes	Other Local Taxes [2]
First	$74,708	$18,983	$25,507	$44,490	$123,377	$74,348	$15,626
Second	71,905	40,342	15,501	55,843	132,047	61,466	18,878
Third	105,365	58,590	17,515	76,105	187,516	73,871	21,669
Fourth	148,164	70,441	19,864	90,305	247,402	79,587	24,735
Fifth	229,127	71,617	24,412	96,029	337,649	102,765	28,143
Sixth	325,855	65,587	30,014	95,600	434,856	127,689	32,316
Seventh	416,032	45,088	36,850	81,938	515,565	179,352	38,712
Eighth	534,387	33,106	47,086	80,192	637,754	205,335	47,045
Ninth	642,384	21,170	58,815	79,985	754,190	271,316	57,161
Tenth	1,048,146	11,504	230,356	241,860	1,323,196	678,515	108,138
TOTALS	$3,596,073	$436,427	$505,921	$942,348	$4,693,553	$1,854,244	$392,422
Top 5%	$636,056	$5,668	$188,971	$194,639	$847,813	$391,334	$72,250
Top 1%	$186,228	$711	$118,493	$119,204	$309,759	$175,800	$30,425

Population Decile	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	$213,351	$189,920	$134,177	$324,096	$537,447
Second	212,392	189,101	146,025	335,126	547,518
Third	283,056	247,695	169,382	417,077	700,133
Fourth	351,724	389,288	194,716	584,004	935,728
Fifth	468,557	612,244	225,563	837,807	1,306,364
Sixth	594,861	860,944	262,396	1,123,340	1,718,201
Seventh	733,629	1,196,220	317,966	1,514,186	2,247,816
Eighth	890,134	1,632,149	390,768	2,022,917	2,913,051
Ninth	1,082,667	2,332,958	480,609	2,813,567	3,896,234
Tenth	2,109,849	7,072,549	1,045,380	8,117,929	10,227,778
TOTALS	$6,940,219	$14,723,070	$3,366,981	$18,090,051	$25,030,270
Top 5%	$1,311,397	$5,420,142	$734,013	$6,154,155	$7,465,551
Top 1%	$515,984	$3,024,580	$345,475	$3,370,055	$3,886,039

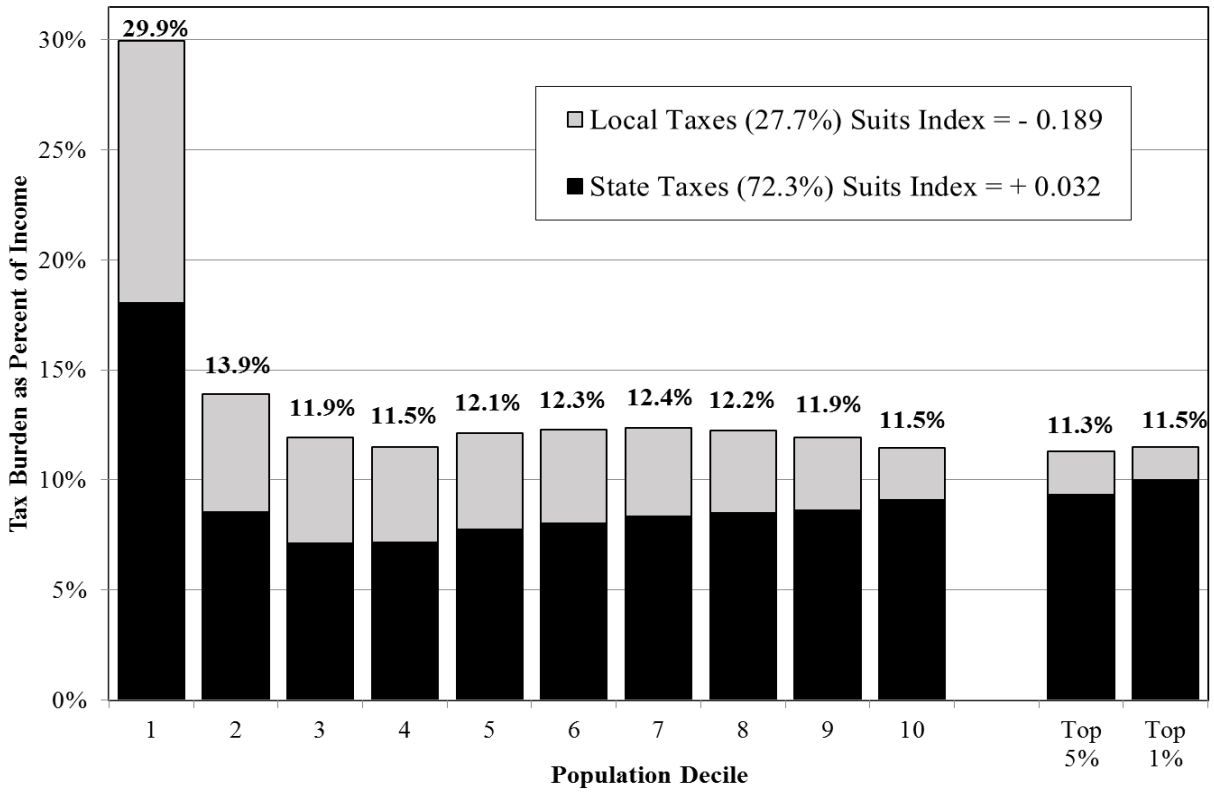
[1] Includes seasonal recreational residential (cabins).

[2] Includes taconite production tax.

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 3rd to 10th 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



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.

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Table 2-3 2014 Population Deciles - Effective Tax Rates

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$11,262 & Under	266,091	$1,794,677	- 1.2%	1.5%	6.6%	4.2%	10.8%	- 2.5%	1.0%	5.3%	2.6%	0.6%
Second	$11,263 - $18,218	266,091	3,932,988	- 1.1%	0.8%	3.8%	2.1%	5.9%	- 1.8%	0.5%	2.5%	1.5%	0.2%
Third	$18,219 - $26,140	266,091	5,867,561	- 0.2%	0.6%	2.9%	1.6%	4.5%	- 1.5%	0.4%	1.8%	1.3%	0.2%
Fourth	$26,141 - $35,360	266,091	8,144,990	1.0%	0.5%	2.4%	1.3%	3.7%	- 1.0%	0.3%	1.3%	1.2%	0.1%
Fifth	$35,361 - $46,141	266,091	10,782,586	2.3%	0.5%	2.0%	1.2%	3.2%	- 0.8%	0.3%	1.0%	1.1%	0.1%
Sixth	$46,142 - $59,617	266,091	13,996,850	3.1%	0.4%	1.8%	1.0%	2.8%	- 0.6%	0.2%	0.8%	1.0%	0.1%
Seventh	$59,618 - $77,665	266,091	18,160,067	3.6%	0.4%	1.7%	1.0%	2.6%	- 0.4%	0.2%	0.7%	1.0%	0.1%
Eighth	$77,666 - $102,785	266,091	23,787,346	4.1%	0.4%	1.5%	0.9%	2.4%	- 0.2%	0.2%	0.6%	0.9%	0.1%
Ninth	$102,786 - $147,968	266,091	32,608,520	4.6%	0.3%	1.4%	0.8%	2.2%	0.0%	0.2%	0.5%	0.8%	0.1%
Tenth	$147,969 & Over	266,091	89,117,364	6.3%	0.3%	0.8%	0.6%	1.5%	0.0%	0.2%	0.2%	0.6%	0.1%
TOTALS		2,660,914	$208,192,948	4.5%	0.4%	1.4%	0.9%	2.3%	- 0.3%	0.2%	0.6%	0.8%	0.1%
Top 5%	Over $213,506	133,205	$66,036,823	6.8%	0.2%	0.7%	0.6%	1.3%	0.0%	0.2%	0.2%	0.5%	0.1%
Top 1%	Over $512,192	26,617	$33,741,177	7.7%	0.2%	0.5%	0.5%	1.1%	0.0%	0.2%	0.1%	0.6%	0.1%

Population Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total [1]	Nonresidential Local Property Taxes [2]	Other Local Taxes
First	4.2%	1.1%	1.4%	2.5%	6.9%	4.1%	0.9%
Second	1.8%	1.0%	0.4%	1.4%	3.4%	1.6%	0.5%
Third	1.8%	1.0%	0.3%	1.3%	3.2%	1.3%	0.4%
Fourth	1.8%	0.9%	0.2%	1.1%	3.0%	1.0%	0.3%
Fifth	2.1%	0.7%	0.2%	0.9%	3.1%	1.0%	0.3%
Sixth	2.3%	0.5%	0.2%	0.7%	3.1%	0.9%	0.2%
Seventh	2.3%	0.2%	0.2%	0.5%	2.8%	1.0%	0.2%
Eighth	2.2%	0.1%	0.2%	0.3%	2.7%	0.9%	0.2%
Ninth	2.0%	0.1%	0.2%	0.2%	2.3%	0.8%	0.2%
Tenth	1.2%	0.0%	0.3%	0.3%	1.5%	0.8%	0.1%
TOTALS	1.7%	0.2%	0.2%	0.5%	2.3%	0.9%	0.2%
Top 5%	1.0%	0.0%	0.3%	0.3%	1.3%	0.6%	0.1%
Top 1%	0.6%	0.0%	0.4%	0.4%	0.9%	0.5%	0.1%

Population Decile	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	11.9%	10.6%	7.5%	18.1%	29.9%
Second	5.4%	4.8%	3.7%	8.5%	13.9%
Third	4.8%	4.2%	2.9%	7.1%	11.9%
Fourth	4.3%	4.8%	2.4%	7.2%	11.5%
Fifth	4.3%	5.7%	2.1%	7.8%	12.1%
Sixth	4.2%	6.2%	1.9%	8.0%	12.3%
Seventh	4.0%	6.6%	1.8%	8.3%	12.4%
Eighth	3.7%	6.9%	1.6%	8.5%	12.2%
Ninth	3.3%	7.2%	1.5%	8.6%	11.9%
Tenth	2.4%	7.9%	1.2%	9.1%	11.5%
TOTALS	3.3%	7.1%	1.6%	8.7%	12.0%
Top 5%	2.0%	8.2%	1.1%	9.3%	11.3%
Top 1%	1.5%	9.0%	1.0%	10.0%	11.5%

[1] Includes seasonal recreational residential (cabins).

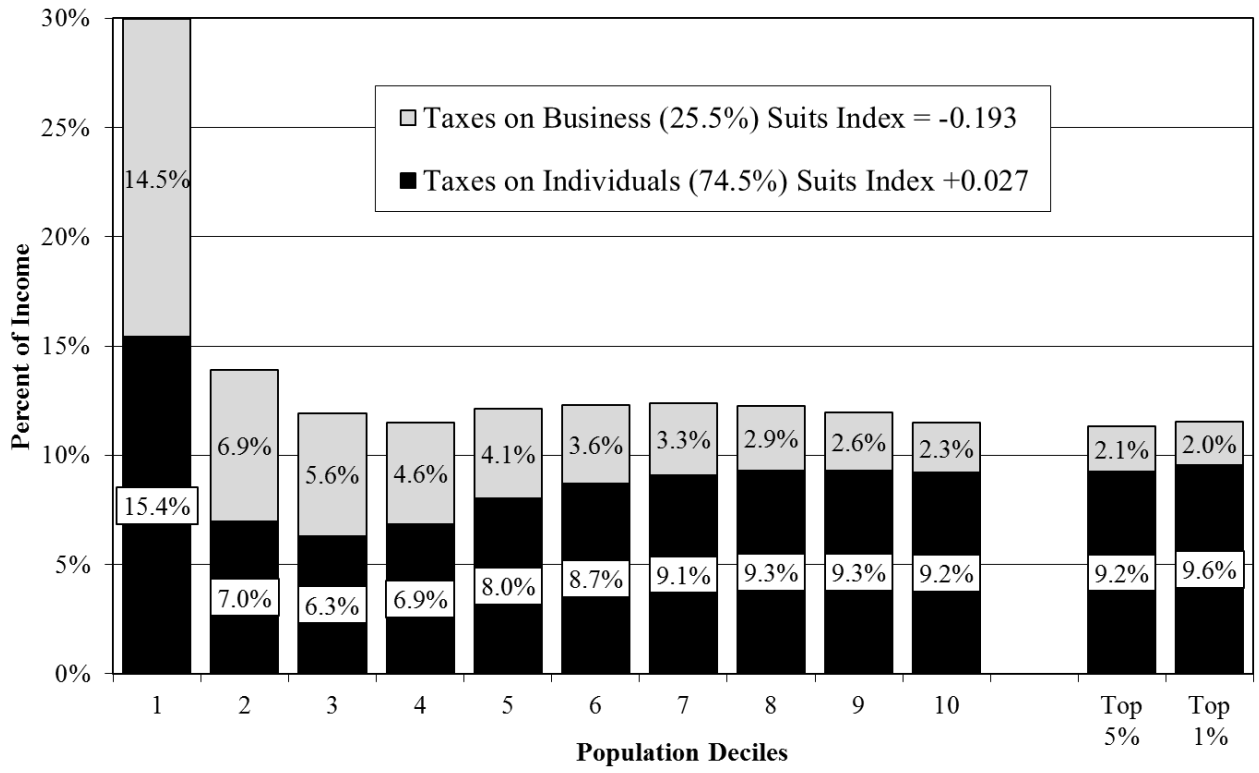
[2] Includes taconite production tax.

The Suits index for state taxes is +0.032, meaning that (as seen in *Figure 2-2* above) state taxes are progressive. In contrast, the Suits index for local taxes is -0.189 (regressive). When combined, the Suits index for all Minnesota state and local taxes is -0.029 (regressive).

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 -0.193. Taxes on individuals are progressive, with effective tax rates rising with income between the 3rd and 9th deciles before falling slightly in the 10th, and a Suits index of +0.027.

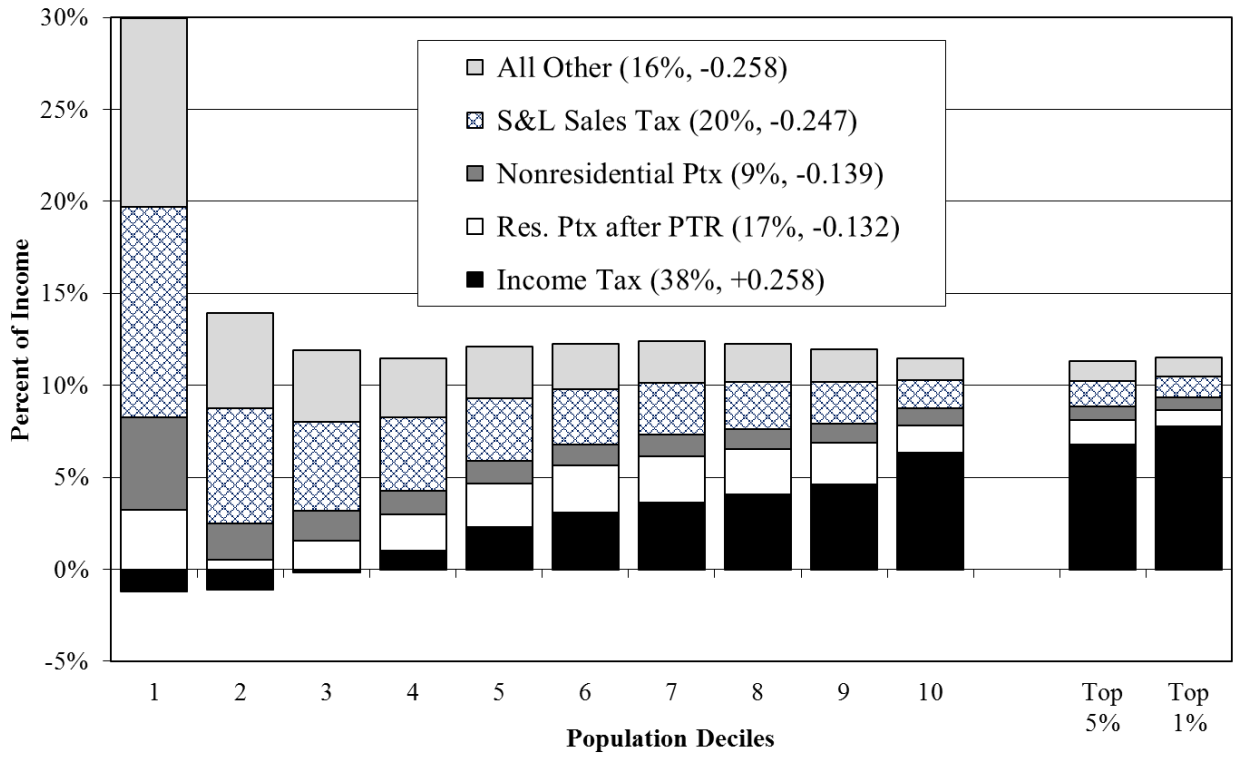
Figure 2-3
Effective Tax Rates by Population
Business Taxes Compared to Taxes on Individuals



Summary of 2014 Tax Burden by Major Tax Type

Figure 2-4 and *Table 2-4* summarize how the 2014 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
2014 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 (2014)

Population Decile	Personal Income Tax	Residential Property Taxes*	Other Property Taxes	State & Local Sales Taxes	All Other S&L Taxes
First	-1.2%	4.4%	5.0%	11.5%	10.2%
Second	-1.1%	1.6%	2.0%	6.3%	5.2%
Third	-0.2%	1.8%	1.6%	4.8%	3.9%
Fourth	1.0%	2.0%	1.3%	4.0%	3.2%
Fifth	2.3%	2.4%	1.2%	3.4%	2.8%
Sixth	3.1%	2.5%	1.1%	3.0%	2.5%
Seventh	3.6%	2.5%	1.2%	2.8%	2.3%
Eighth	4.1%	2.5%	1.1%	2.6%	2.0%
Ninth	4.6%	2.3%	1.0%	2.3%	1.8%
Tenth	6.3%	1.5%	0.9%	1.5%	1.2%
Total	4.5%	2.0%	1.1%	2.4%	1.9%
Top 5%	6.8%	1.3%	0.7%	1.4%	1.1%
Top 1%	7.7%	0.9%	0.7%	1.1%	1.0%
Share of Total Tax Burden	37.8%	16.5%	9.1%	20.4%	16.2%
Suits Index	+0.258	-0.132	-0.139	-0.247	-0.258

*Residential property taxes are net of property tax refunds.

Individual Income Tax

The individual income tax accounts for 38 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 three deciles, showing the impact of three refundable low-income credits (which can more than offset any income tax liabilities).[16] It rose steadily from 1.0 percent of income for the 4th decile to 6.3 percent for the 10th decile. The top 5 percent and 1 percent of households have even higher effective tax rates, at 6.8 and 7.7 percent respectively. The Suits index of +0.258 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.

[16] 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 ($588 million in 2014) offset 12.4 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 16.5 percent of the total state and local tax burden.

Effective tax rates rise from 1.6 percent of income in the 2nd decile to 2.5 percent of income in the 8th decile before falling to 2.3 percent in the 9th and 1.5 percent in the 10th decile. The Suits index of -0.132 (regressive) shows that the impact of the sharp drop in the 10th decile well outweighs the increasing effective tax rates over the lower deciles.

Although residential property tax burdens (after PTR) are regressive, they are noticeably less regressive than either sales taxes or "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 -0.206 – much closer to that of state and local sales taxes (-0.247).[17]

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.[18]

State and Local Sales Taxes

State and local sales taxes (including the sales tax on motor vehicles) account for 20.4 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 2014, the effective state and local sales tax rate falls from 6.3 percent in the 2nd decile to 1.5 percent in the 10th decile. Sales taxes overall are much more regressive than property taxes (after PTR), with a Suits index of -0.247.

[17] For more detail on the impact of property tax refunds on residential property taxes, see in *Chapter 4, Section C.*

[18] 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 16 percent of Minnesota's state and local tax burden, and their combined impact is more regressive than state and local sales taxes (a Suits index of -0.258).

Representative Households

Table 2-5 presents average tax burdens for households in each decile. For example, in the 6th decile (average income $52,602), the average Minnesota state and local tax burden of $6,457 includes $1,164 of property taxes after PTR, $1,627 of income tax, $950 of consumer sales tax, $405 of excise taxes, $669 of other taxes on individuals, and $1,642 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 7 percent in the 1st decile to 89 percent in the 10th decile. The percentage who are homeowners rises from 16 percent in the 1st decile to 96 percent in the 10th. The percentage who have children rises from 17 percent in the 1st decile to 51 percent in the 10th.

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 parents, and *Table 5-5* is limited to seniors. 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*.

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Table 2-5

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

Each Decile Contains 266,091 Households

HOUSEHOLD CHARACTERISTICS	Population Decile										
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Total
Number of Households	266,091	266,091	266,091	266,091	266,091	266,091	266,091	266,091	266,091	266,091	2,660,914
Average Household Income	$6,745	$14,781	$22,051	$30,610	$40,522	$52,602	$68,248	$89,396	$122,546	$334,913	$78,241
Maximum Household Income	$11,262	$18,218	$26,140	$35,360	$46,141	$59,617	$77,665	$102,785	$147,968		
Percent with Earned Income[1]	51%	58%	68%	77%	77%	80%	84%	87%	91%	92%	77%
Average Earned Income[1]	$7,956	$13,629	$19,880	$27,322	$35,556	$43,994	$55,829	$72,271	$98,950	$201,942	$64,543
Homeowners[2]	16%	19%	26%	37%	51%	65%	78%	87%	92%	96%	57%
Married	7%	7%	11%	17%	26%	38%	54%	72%	84%	89%	41%
Seniors	13%	18%	21%	22%	24%	27%	26%	22%	19%	18%	21%
Households with Children	17%	23%	24%	27%	25%	25%	30%	39%	46%	51%	31%
Average Market Value	$166,429	$132,944	$128,334	$126,427	$140,759	$147,375	$163,275	$175,666	$205,530	$294,104	$185,526
Average Monthly Rent	$160	$317	$476	$648	$797	$953	$1,069	$1,209	$1,317	$1,498	$623
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$352	$422	$616	$822	$1,130	$1,471	$1,733	$2,133	$2,494	$3,982	$1,515
-Property Tax Refund	-$168	-$263	-$323	-$319	-$309	-$307	-$249	-$202	-$57	-$13	-$221
Tax after PTR	$184	$159	$293	$502	$821	$1,164	$1,484	$1,931	$2,437	$3,969	$1,294
Renters Only											
Total Tax on Rental Unit	$463	$830	$1,154	$1,504	$1,820	$2,160	$2,414	$2,731	$2,966	$3,328	$1,463
Renters Share of Tax	$155	$278	$387	$504	$610	$725	$810	$916	$995	$1,116	$491
-Property Tax Refund	-$208	-$327	-$350	-$314	-$229	-$171	-$51	-$10	$0	$0	-$242
Tax after PTR	-$53	-$49	$37	$191	$381	$553	$758	$906	$995	$1,116	$248
Homeowners Only											
Total Tax on Home	$1,791	$1,430	$1,499	$1,525	$1,690	$1,896	$2,017	$2,321	$2,625	$4,094	$2,391
-Property Tax Refund	-$475	-$464	-$487	-$431	-$415	-$389	-$308	-$232	-$62	-$13	-$251
Homeowners Tax after PTR	$1,316	$966	$1,012	$1,094	$1,275	$1,508	$1,709	$2,090	$2,563	$4,082	$2,140
State Income Tax	-$82	-$162	-$41	$302	$926	$1,627	$2,479	$3,646	$5,644	$21,208	$3,555
State Sales Tax	$444	$557	$641	$733	$829	$950	$1,134	$1,369	$1,659	$2,820	$1,114
State Excise Taxes	$342	$349	$360	$375	$389	$405	$436	$474	$511	$684	$433
Other Taxes	$222	$281	$357	$450	$564	$669	$831	$1,018	$1,230	$2,177	$780
Business Taxes[3]	$910	$874	$1,021	$1,153	$1,380	$1,642	$2,084	$2,511	$3,162	$7,579	$2,232
Total State and Local Tax Burden	$2,020	$2,058	$2,631	$3,517	$4,909	$6,457	$8,448	$10,948	$14,642	$38,437	$9,407
Effective Tax Rate for all Taxes	29.9%	13.9%	11.9%	11.5%	12.1%	12.3%	12.4%	12.2%	11.9%	11.5%	12.0%

[1]Earned income includes wage and self-employment income.

[2]Homeowners include farm homesteads.

[3]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 2014

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* (on page 26) reports the Suits index for each tax. The Suits index for the overall state and local tax system (-0.029) 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 well 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.[19] Mortgage and deed taxes are also slightly progressive, just to the right of zero. Two other tax types (the motor vehicle sales tax and nonresidential property taxes) are the least regressive of the remaining taxes, with Suits indexes near -0.140.

Homeowner property taxes and the sales tax are among a larger group of taxes with Suits indexes between -0.175 and -0.300. Even more regressive taxes (with Suits indexes between -0.300 and -0.400) include the property tax on rental housing, the MinnesotaCare taxes, the motor fuels excise tax, and taxes on insurance premiums. The two most regressive taxes (Suits indexes close to -0.500) are lawful gambling and the cigarette and tobacco taxes.

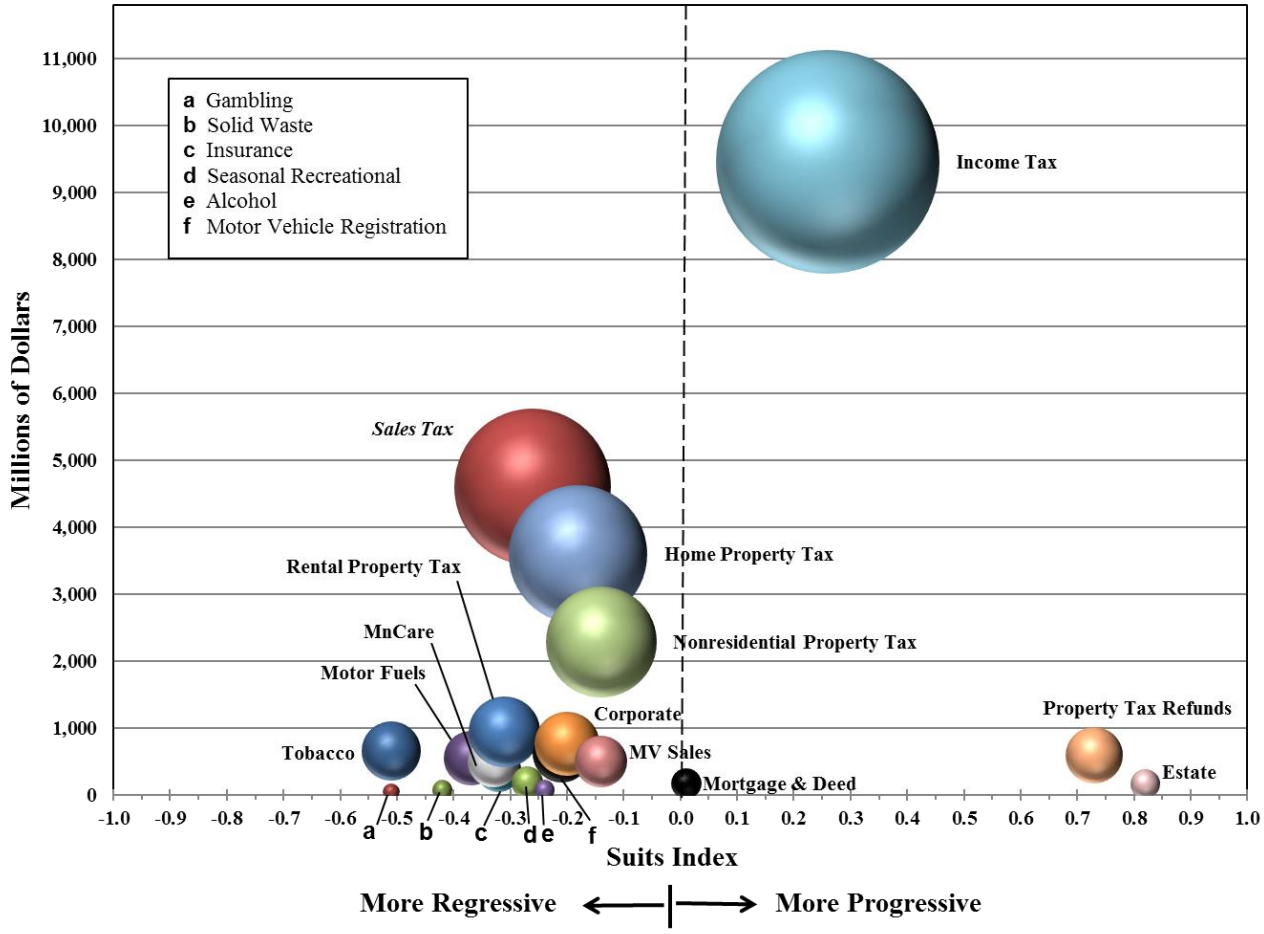
Minnesota's income tax, property tax refunds, and estate tax are effective in offsetting almost all of the regressivity of other taxes. The full portfolio (with a Suits index of -0.028) is less regressive than any of the other tax types except the mortgage and deed taxes.

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.

[19] 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.

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 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 (2014)



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 *Table 2-5*. The Suits index will change from year to year even if there are no changes in tax law.

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.[20]

[20] 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.

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Chapter 3: Projected Results, 2019

This chapter examines the state and local tax burdens imposed on Minnesota taxpayers in 2019. The taxes included are the same as those analyzed for 2014. Changes between 2014 and 2019 are discussed, along with possible reasons for those changes.

Tax Incidence Projections to 2019 (Assuming Current Law)

To analyze tax incidence five years beyond 2014, the 2014 results must be projected into the future. A variety of methods were used to do this.

***Income* –** The HITS income tax model[21] uses growth rates derived from the state economic forecast to grow each of the various categories of income: wages, interest, pensions, capital gains, social security, etc. The expected growth rates vary by type of income. These differential growth rates were applied to each type of income a sample household received in 2014, yielding an estimate of each household's total income in 2019. The various types of income are grown at different rates, so some households will experience faster income growth than others. Because of this, sample households may switch deciles between 2014 and 2019.

***Population* –** The number of Minnesota households is expected to grow by 4.3 percent between 2014 and 2019, a growth rate of just under one percent per year. Therefore, sample households are assumed to represent 4.3 percent more households in 2019.[22]

Taxes – All taxes were adjusted for tax law changes that have already gone into effect or, under current law, are scheduled to go into effect. Income tax projections are from the HITS income tax model. For the remaining taxes in the study, total collections were based on the November 2016 forecast from the Department of Management and Budget. Business taxes were assumed to be shifted in the same manner as were the corresponding 2014 business taxes. In the absence of law changes, taxes imposed directly on households are allocated to the various households in the sample in the same way the 2014 taxes were allocated. If tax law has changed since 2014 (as with the restructured estate tax), the study adjusts the allocation.

Total Tax Burden in 2019

In 2019, Minnesota residents are projected to pay a total of $30.2 billion in Minnesota state and local taxes. Total income is projected to be $255.3 billion. Because household income increased faster (at 22.6 percent) than the total tax burden (at 20.5 percent), the effective tax rate is projected to fall from 12.0 percent to 11.8 percent of income.

[21] The House Income Tax Simulation (HITS) model is the micro-simulation model used both for forecasting and for estimating the revenue impact of proposed changes in tax law. The version used in this study is based on a stratified random sample of tax year 2014 income tax returns and the November 2016 economic forecast.

[22] The income tax model projects a 5.2 percent growth in tax returns, so the number of non-filers is assumed to fall by 2.5 percent.

Details of Minnesota tax collections before and after tax shifting are shown in *Table 3-1*. Of the $35.8 billion in total tax collections in 2019, $30.2 billion (84.2 percent) of the total burden falls on Minnesotans, either directly or indirectly. The other 15.8 percent ($5.6 billion) is exported to nonresident consumers and owners of capital.

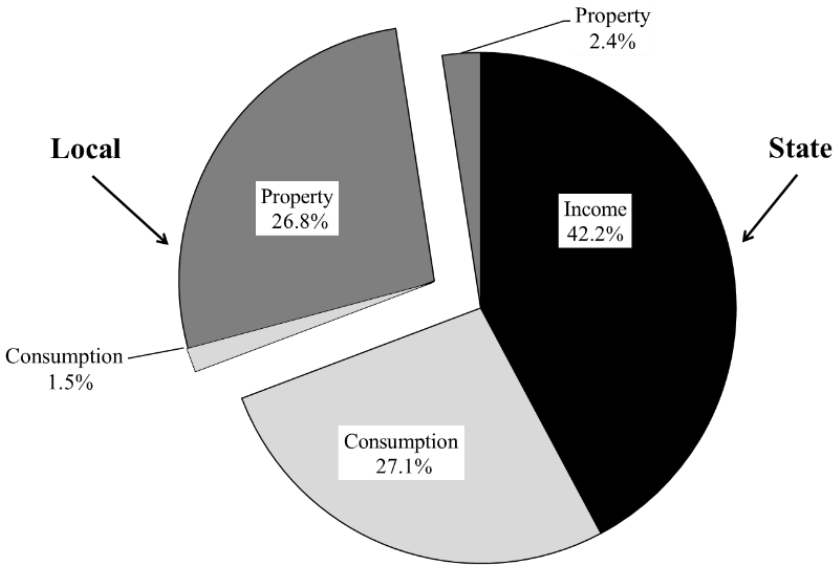
As shown in the "as imposed" columns of the table, $22.8 billion (63 percent) of the total tax is imposed directly on Minnesota households. Another $1.3 billion (4 percent) is paid by out-of-state visitors. The remaining $11.7 billion (33 percent) is initially imposed on businesses.

The "after shifting" columns in *Table 3-1*, 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 94 percent of total collections. Minnesota residents bear a smaller share of the general sales tax burden (79 percent). At the other end of the scale, Minnesotans are estimated to bear only 25 percent of the burden of property taxes on industrial property. Minnesotans are estimated to bear 63 percent of the burden of the total tax imposed on business.

Table 3-1 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 3-1* shows each category's share of the total state and local tax burden for Minnesotans. It also distinguishes state taxes from local taxes. Almost 72 percent of the total burden is from state taxes; about 28 percent is from local taxes. By tax category, 42 percent of the burden is from taxes on income, 29 percent from taxes on consumption, and 29 percent from taxes on property.

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

Figure 3-1
2019 Distribution of Minnesota
State and Local Tax Burdens by Tax Type



What changed from 2014 to 2019? The income taxes share of the tax burden increases between 2014 and 2019, rising from 41 percent to 42 percent of the total. Despite this, the state taxes share falls slightly.

Taxes by Population Decile

To summarize the distribution of tax burdens by income level, the population of Minnesota households was divided into ten equal-sized groups or *deciles* of households ranked by household income levels. By definition, the 1st decile includes the 10 percent of households with the lowest income levels and the 10th decile includes the 10 percent of households with the highest incomes. There are expected to be 277,601 households in each population decile. The total burden by tax type for each decile is summarized in *Table 3-2*.

Taxpayers in the top decile (incomes of $174,625 and over in 2019) are expected to bear 40.2 percent of the total tax burden while having 42.2 percent of total income. By tax type, taxpayers in the top decile would pay 57 percent of the individual income tax, 27 percent of the consumer sales tax, 29 percent of the gross homeowner property tax, and 32 percent of business taxes.[23]

In contrast, taxpayers in the bottom decile (incomes of $13,418 and below) are projected to bear 1.9 percent of the total tax burden while receiving only 0.9 percent of total income. The bottom-decile taxpayers will have a negative individual income tax burden due to the refundable tax credits. They will pay 3.8 percent of the consumer sales tax, 2.0 percent of gross homeowner property tax, and 4.1 percent of business taxes.

[23] 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.

Summary List

Table 3-1
2019 Tax Collection Amounts

Tax Type	Total ($ Millions)	As Imposed			After shifting		Full-Sample Suits Index
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	$12,561	$11,844	$717		$11,844	$717	0.235
Corporation franchise tax [1]	1,318			$1,318	724	594	-0.185
Estate tax	164	164			164		0.846
Total Income and Estate Taxes	$14,044	$12,008	$717	$1,318	$12,732	$1,311	0.219
Taxes on Consumption							
Total sales tax	$7,191	$3,497	$353	$3,342	$5,646	$1,545	-0.230
General sales/use tax	6,328	3,006	353	2,969	4,999	1,328	-0.243
Sales tax on motor vehicles	864	491		373	646	217	-0.133
Motor fuels excise taxes	924	439	52	433	564	360	-0.353
Alcoholic beverage excise taxes	93	80	13		80	13	-0.221
Cigarette and tobacco excise taxes	659	659	0		659	0	-0.490
Insurance premiums taxes	501	358		143	426	75	-0.311
Gambling taxes	68	67	1		67		-0.503
MinnesotaCare taxes	697	639	59		639	59	-0.325
Solid waste management taxes	88	41		47	81	7	-0.406
Total Consumption Taxes	$10,221	$5,779	$477	$3,966	$8,161	$2,059	-0.275
Taxes on Property							
State Property Tax	$906	$35	$9	$863	$485	$421	-0.150
Residential recreational property	44	35	9		35	9	-0.262
Commercial [2]	583			583	346	237	-0.142
Industrial	169			169	42	128	-0.010
Utility	111			111	63	48	-0.224
Motor vehicle registration tax	806	675		131	751	55	-0.205
Mortgage and deed taxes	249	119		130	213	36	0.017
Total Property Taxes	$1,961	$829	$9	$1,124	$1,450	$512	-0.154
Property Tax Refunds							
Homeowners	-$480	-$480			-$480		0.698
Renters	-240	-240			-240		0.899
Total Property Tax Refunds	-$720	-$720			-$720		0.765
Total State Taxes	$25,506	$17,895	$1,203	$6,408	$21,623	$3,882	0.040
Local Taxes							
Property Taxes	$9,683	$4,668	$46	$4,969	$8,087	$1,596	-0.185
General Property Tax	9,574	4,668	46	4,859	8,077	1,497	-0.186
Homeowners (before PTR)	4,482	4,482			4,482		-0.172
Residential recreational property	232	186	46		186	46	-0.262
Commercial [2]	1,861			1,861	1,105	755	-0.142
Industrial	540			540	133	408	-0.010
Farm (other than residence) [3]	669			669	666	2	-0.127
Rental Housing (before PTR)	1,399			1,399	1,284	115	-0.303
Utility	391			391	221	170	-0.224
Mining Production Taxes (taconite)	109			109	11	99	0.280
Taxes on consumption							
Local Sales Taxes	473	225	26	222	374	99	-0.243
Local Gross Earnings Taxes	156			156	88	68	-0.224
Total Local Taxes	$10,312	$4,893	$72	$5,346	$8,549	$1,763	-0.188
Total State and Local Taxes	$35,817	$22,788	$1,275	$11,754	$30,172	$5,644	-0.024

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes Timber.

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Table 3-2 2019 Population Deciles - Amounts ($ Thousands)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes & HIF	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	$13,418 & under	277,601	$2,213,792	-$30,289	$25,274	$132,354	$84,230	$216,584	-$72,541	$17,543	$96,025	$56,950	$12,340
Second	$13,419 - $21,894	277,601	4,922,656	-51,240	29,988	170,733	94,396	265,129	-93,568	18,643	100,494	74,954	8,988
Third	$21,895 - $31,391	277,601	7,361,888	10,822	35,611	196,880	109,812	306,692	-105,230	22,232	104,103	96,387	10,959
Fourth	$31,392 - $42,344	277,601	10,196,686	154,329	41,321	225,376	125,285	350,661	-110,442	26,113	108,887	120,063	12,149
Fifth	$42,345 - $55,093	277,601	13,450,437	365,663	48,154	255,507	144,028	399,535	-106,167	31,015	113,846	149,940	14,625
Sixth	$55,094 - $70,943	277,601	17,398,693	579,695	57,382	298,624	171,125	469,749	-100,372	36,854	120,183	179,712	18,211
Seventh	$70,944 - $92,150	277,601	22,500,975	869,532	70,611	359,229	208,638	567,867	-79,982	45,744	130,801	223,626	23,217
Eighth	$92,151 - $121,494	277,601	29,405,147	1,247,330	86,102	431,330	250,188	681,518	-49,044	56,285	143,005	268,399	27,896
Ninth	$121,495 - $174,624	277,601	40,186,565	1,896,616	109,302	527,019	311,284	838,303	-2,824	71,937	159,607	321,804	37,638
Tenth	$174,625 & over	277,601	107,693,378	6,801,455	220,708	899,636	650,207	1,549,843	0	158,862	225,568	570,598	112,932
TOTALS		2,776,011	$255,330,219	$11,843,912	$724,453	$3,496,687	$2,149,193	$5,645,880	-$720,170	$485,229	$1,302,519	$2,062,433	$278,954
Top 5%	Over $250,362	138,976	$79,306,524	$5,368,449	$150,520	$576,764	$454,552	$1,031,316	$0	$113,415	$134,284	$386,865	$88,826
Top 1%	Over $598,214	27,767	$39,871,220	$3,040,378	$65,155	$219,449	$210,006	$429,454	$0	$55,238	$44,064	$207,277	$51,698

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes [2]
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total [1]		
First	$90,947	$26,799	$33,938	$60,737	$156,609	$81,184	$18,021
Second	91,207	55,589	20,115	75,704	172,436	70,268	22,249
Third	134,752	80,382	24,427	104,810	246,872	87,373	25,602
Fourth	190,525	96,169	26,671	122,840	324,375	96,344	29,245
Fifth	288,475	97,101	32,199	129,300	432,645	119,404	33,326
Sixth	418,159	87,969	41,034	129,003	563,442	159,362	39,078
Seventh	520,129	61,197	52,721	113,918	655,239	211,525	47,211
Eighth	664,615	45,571	63,383	108,954	801,169	223,338	56,775
Ninth	792,063	28,629	84,412	113,041	943,123	369,313	69,851
Tenth	1,291,004	15,204	310,390	325,594	1,656,209	706,430	130,976
TOTALS	$4,481,875	$594,610	$689,292	$1,283,902	$5,952,118	$2,124,540	$472,333
Top 5%	$784,088	$6,785	$256,908	$263,694	$1,068,358	$459,468	$87,338
Top 1%	$227,605	$923	$160,139	$161,062	$393,834	$208,241	$36,408

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
$255,815	$178,666	$143,220	$321,885	$577,700
264,952	196,274	157,114	353,388	618,340
359,847	297,257	184,320	481,576	841,423
449,964	492,185	210,896	703,080	1,153,044
585,374	772,409	244,203	1,016,611	1,601,986
761,882	1,070,113	291,300	1,361,413	2,123,295
913,975	1,494,188	357,229	1,851,417	2,765,392
1,081,281	2,030,769	430,720	2,461,489	3,542,771
1,382,286	2,890,415	541,968	3,432,383	4,814,669
2,493,615	8,473,019	1,166,948	9,639,966	12,133,581
$8,548,991	$17,895,293	$3,727,917	$21,623,210	$30,172,201
$1,615,164	$6,450,269	$823,406	$7,273,675	$8,888,839
$638,484	$3,505,188	$388,077	$3,893,265	$4,531,749

[1] Includes seasonal recreational residential (cabins).

[2] Includes taconite production tax.

Overall Effective Tax Rates

In a similar fashion as was done for taxes paid in 2014, effective tax rates by tax type for 2019 are reported in *Table 3-3*. 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 11.8 percent. Effective tax rates rise from 11.3 percent of income in the 4th decile to 12.3 percent in the 7th decile, but then fall to 12.0 percent in the 9th decile and 11.3 percent in the 10th decile. For the top 5 percent and the top 1 percent of households the effective tax rates are 11.2 percent and 11.4 percent respectively.

What changed between 2014 and 2019? The average tax rate falls by 0.2 percentage points (from 12.0 to 11.8 percent). It falls by a half percentage point or more in each of the first 3 deciles. Effective tax rates fall by 0.2 percentage points or less for all but one of the other deciles and for the top 5 percent and top 1 percent. A small increase for the 9th decile (0.03 percent of income) raises the *rounded* effective tax rate from 11.9 percent to 12.0 percent.

The drop in the effective tax rate between the 9th and 10th deciles grows between 2014 and 2019 (from 0.4 percentage point to 0.7 percentage point). The drop between the 9th decile and the top 1 percent also rises from 0.4 percentage points to 0.6 percentage points. The effective tax rates in the 3rd and 4th decile both remain below the average overall effective tax rate as was true in 2014 for the first time since 2004.

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Table 3-3 2019 Population Deciles - Effective Tax Rates

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes & HIF	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$13,418 & under	277,601	$2,213,792	- 1.4%	1.1%	6.0%	3.8%	9.8%	- 3.3%	0.8%	4.3%	2.6%	0.6%
Second	$13,419 - $21,894	277,601	4,922,656	- 1.0%	0.6%	3.5%	1.9%	5.4%	- 1.9%	0.4%	2.0%	1.5%	0.2%
Third	$21,895 - $31,391	277,601	7,361,888	0.1%	0.5%	2.7%	1.5%	4.2%	- 1.4%	0.3%	1.4%	1.3%	0.1%
Fourth	$31,392 - $42,344	277,601	10,196,686	1.5%	0.4%	2.2%	1.2%	3.4%	- 1.1%	0.3%	1.1%	1.2%	0.1%
Fifth	$42,345 - $55,093	277,601	13,450,437	2.7%	0.4%	1.9%	1.1%	3.0%	- 0.8%	0.2%	0.8%	1.1%	0.1%
Sixth	$55,094 - $70,943	277,601	17,398,693	3.3%	0.3%	1.7%	1.0%	2.7%	- 0.6%	0.2%	0.7%	1.0%	0.1%
Seventh	$70,944 - $92,150	277,601	22,500,975	3.9%	0.3%	1.6%	0.9%	2.5%	- 0.4%	0.2%	0.6%	1.0%	0.1%
Eighth	$92,151 - $121,494	277,601	29,405,147	4.2%	0.3%	1.5%	0.9%	2.3%	- 0.2%	0.2%	0.5%	0.9%	0.1%
Ninth	$121,495 - $174,624	277,601	40,186,565	4.7%	0.3%	1.3%	0.8%	2.1%	0.0%	0.2%	0.4%	0.8%	0.1%
Tenth	$174,625 & over	277,601	107,693,378	6.3%	0.2%	0.8%	0.6%	1.4%	0.0%	0.1%	0.2%	0.5%	0.1%
TOTALS		2,776,011	$255,330,219	4.6%	0.3%	1.4%	0.8%	2.2%	- 0.3%	0.2%	0.5%	0.8%	0.1%
Top 5%	Over $250,362	138,976	$79,306,524	6.8%	0.2%	0.7%	0.6%	1.3%	0.0%	0.1%	0.2%	0.5%	0.1%
Top 1%	Over $598,214	27,767	$39,871,220	7.6%	0.2%	0.6%	0.5%	1.1%	0.0%	0.1%	0.1%	0.5%	0.1%

Population Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total [1]	Nonresidential Local Property Taxes	Other Local Taxes [2]
First	4.1%	1.2%	1.5%	2.7%	7.1%	3.7%	0.8%
Second	1.9%	1.1%	0.4%	1.5%	3.5%	1.4%	0.5%
Third	1.8%	1.1%	0.3%	1.4%	3.4%	1.2%	0.3%
Fourth	1.9%	0.9%	0.3%	1.2%	3.2%	0.9%	0.3%
Fifth	2.1%	0.7%	0.2%	1.0%	3.2%	0.9%	0.2%
Sixth	2.4%	0.5%	0.2%	0.7%	3.2%	0.9%	0.2%
Seventh	2.3%	0.3%	0.2%	0.5%	2.9%	0.9%	0.2%
Eighth	2.3%	0.2%	0.2%	0.4%	2.7%	0.8%	0.2%
Ninth	2.0%	0.1%	0.2%	0.3%	2.3%	0.9%	0.2%
Tenth	1.2%	0.0%	0.3%	0.3%	1.5%	0.7%	0.1%
TOTALS	1.8%	0.2%	0.3%	0.5%	2.3%	0.8%	0.2%
Top 5%	1.0%	0.0%	0.3%	0.3%	1.3%	0.6%	0.1%
Top 1%	0.6%	0.0%	0.4%	0.4%	1.0%	0.5%	0.1%

Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
11.6%	8.1%	6.5%	14.5%	26.1%
5.4%	4.0%	3.2%	7.2%	12.6%
4.9%	4.0%	2.5%	6.5%	11.4%
4.4%	4.8%	2.1%	6.9%	11.3%
4.4%	5.7%	1.8%	7.6%	11.9%
4.4%	6.2%	1.7%	7.8%	12.2%
4.1%	6.6%	1.6%	8.2%	12.3%
3.7%	6.9%	1.5%	8.4%	12.0%
3.4%	7.2%	1.3%	8.5%	12.0%
2.3%	7.9%	1.1%	9.0%	11.3%
3.3%	7.0%	1.5%	8.5%	11.8%
2.0%	8.1%	1.0%	9.2%	11.2%
1.6%	8.8%	1.0%	9.8%	11.4%

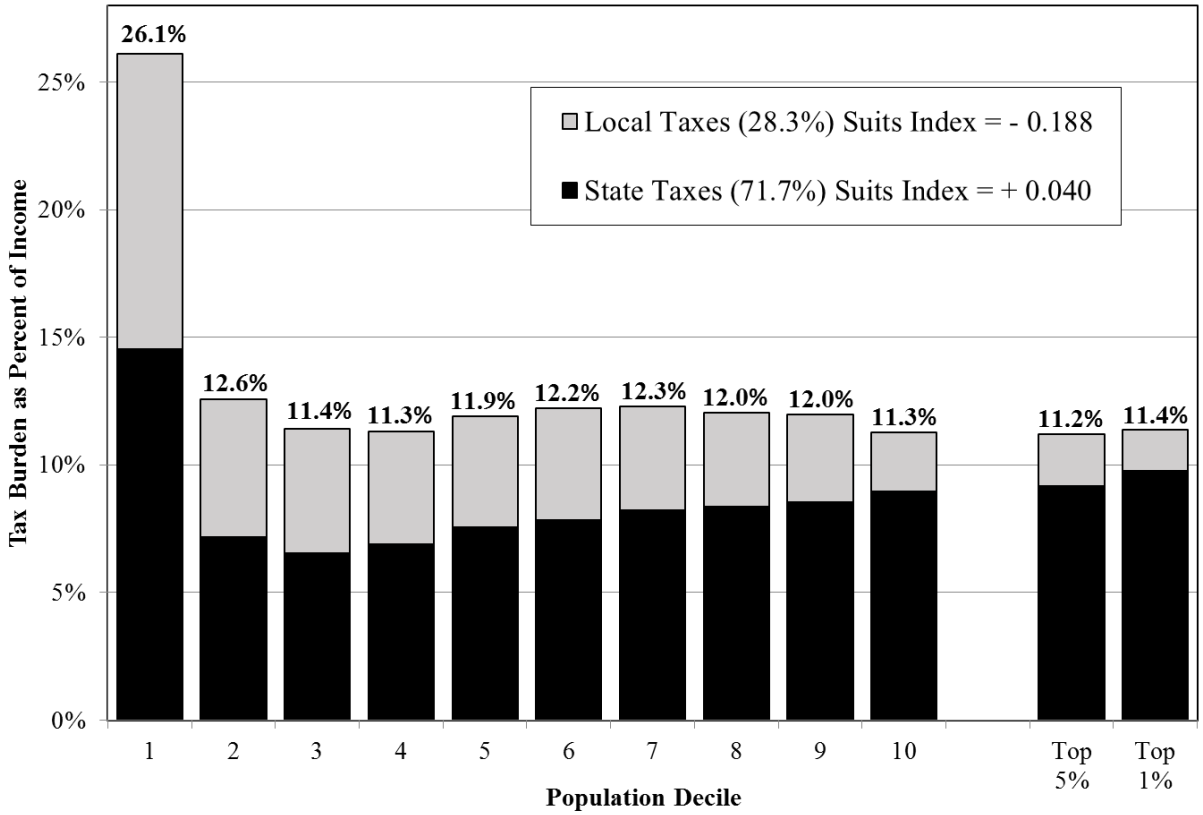
[1] Includes seasonal recreational residential (cabins).

[2] Includes taconite production tax.

State Taxes Compared to Local Taxes

As shown in *Figure 3-2*, 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 3rd to 10th decile and rises further for the top 5 percent and top 1 percent. In contrast, the effective local tax rate falls steadily as income rises.

Figure 3-2
Effective Tax Rates by Population Decile
State Taxes Compared to Local Taxes



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 -1 and 0). 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.

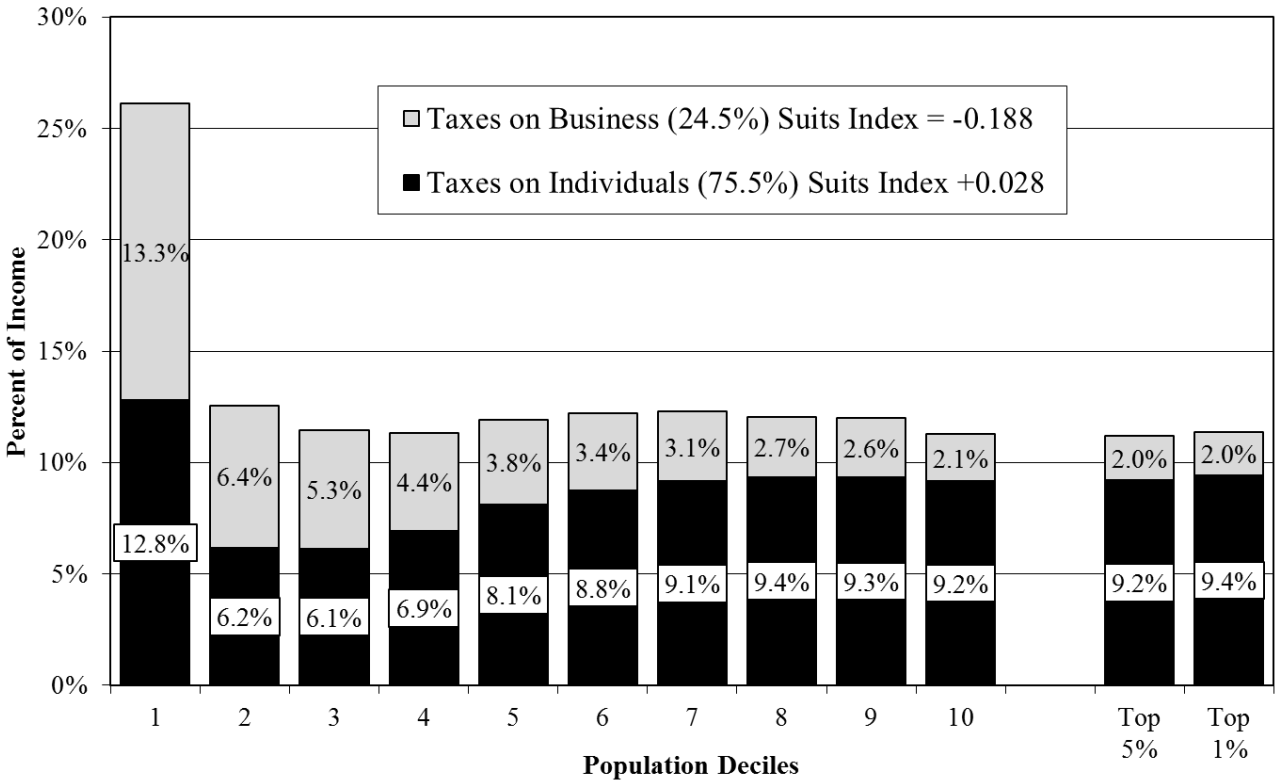
What changed between 2014 and 2019? In 2019, the Suits index for state taxes is +0.040, meaning that (as seen in *Figure 2-2* above) state taxes are progressive. In 2014, state taxes were less progressive, with a Suits index of +0.032. The Suits index for local taxes in 2019 is -0.188 (regressive), almost unchanged from 2014 (-0.189). When combined, the Suits index for all Minnesota state and local taxes in 2019 is -0.024. This is noticeably less regressive than in 2014 (Suits index of -0.029).

Business Taxes Compared to Taxes on Individuals

Figure 3-3 compares taxes on business with taxes paid by individuals. Taxes on business are regressive, with effective tax rates falling with income and a Suits index of -0.188. In contrast, taxes on individuals are progressive, with a Suits index of +0.028. For individual taxes, effective tax rates rise with income between the 3rd and 8th deciles before falling in the 9th and 10th. The effective tax rate for the top 5 percent is the same as for the full 10th decile, and the effective tax rate for the top 1 percent is slightly higher.

What changed between 2014 and 2019? In 2014, business taxes were more regressive (Suits of -0.193) and the business share was larger (25.5 percent).

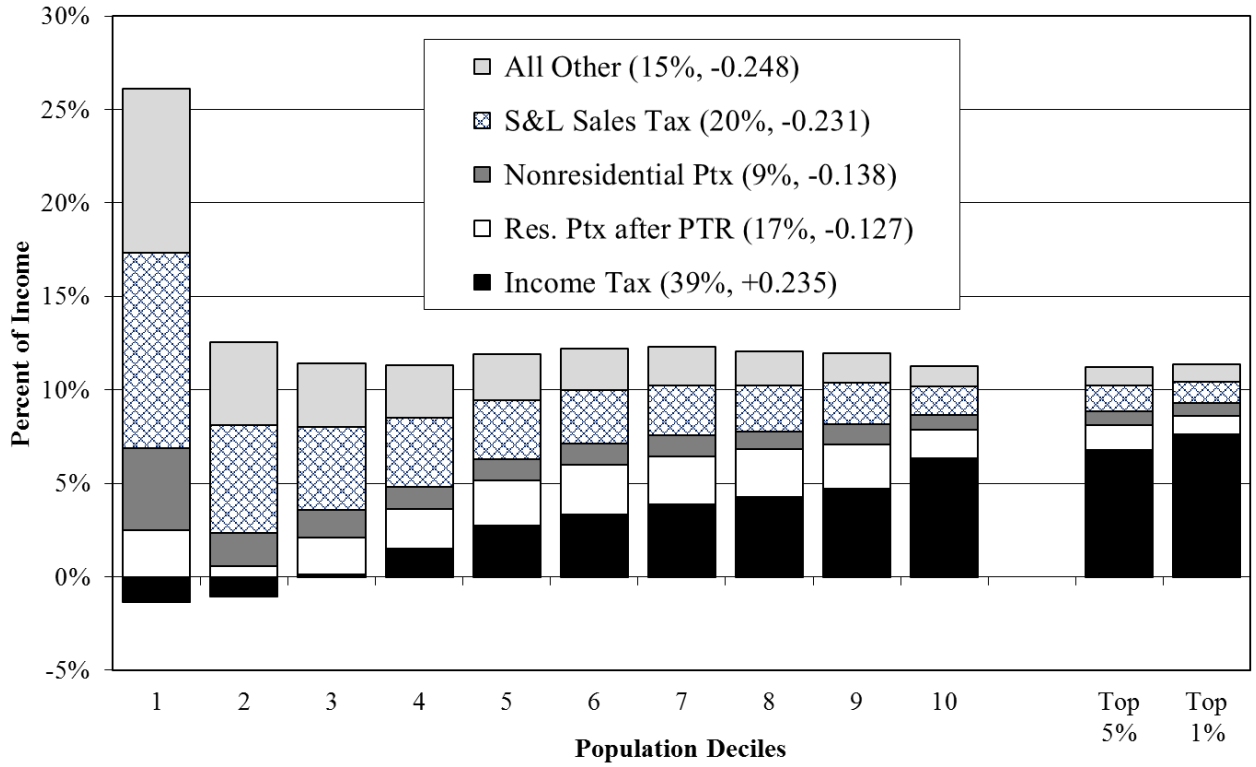
Figure 3-3
Effective Tax Rates by Population Decile
Business Taxes Compared to Taxes on Individuals



Summary of 2019 Tax Burden by Major Tax Type

Figure 3-4 summarizes how the 2019 tax burden of the major tax categories varies by population decile. The categories for this table combine both the individual and business components of these tax types. For example, the state sales tax total includes both the consumer and business portions (and includes the tax on motor vehicles). Residential property tax includes both homeowner and rental property taxes, along with cabins.

Figure 3-4
2019 Tax Incidence by Tax Type



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

The 2019 effective tax rates by tax type are shown in *Table 3-4*. (These are the effective tax rates graphed in *Figure 3-4* above.) The patterns for each of the five tax types are discussed below.

Table 3-5 shows the percentage point changes in effective tax rates between 2014 and 2019, by tax type. The reasons for those changes are also discussed below.

Table 3-4
Effective Tax Rates by Tax Type (2019)

Population Decile	Personal Income Tax	Residential Property Taxes*	Other Property Taxes	State & Local Sales Taxes	All Other S&L Taxes
First	-1.4%	3.8%	4.4%	10.4%	8.8%
Second	-1.0%	1.6%	1.8%	5.8%	4.4%
Third	0.1%	1.9%	1.5%	4.4%	3.4%
Fourth	1.5%	2.1%	1.2%	3.7%	2.8%
Fifth	2.7%	2.4%	1.1%	3.2%	2.5%
Sixth	3.3%	2.7%	1.1%	2.9%	2.2%
Seventh	3.9%	2.6%	1.1%	2.7%	2.0%
Eighth	4.2%	2.6%	0.9%	2.5%	1.8%
Ninth	4.7%	2.4%	1.1%	2.2%	1.6%
Tenth	6.3%	1.5%	0.8%	1.5%	1.1%
Total	4.6%	2.1%	1.0%	2.4%	1.7%
Top 5%	6.8%	1.4%	0.7%	1.4%	1.0%
Top 1%	7.6%	1.0%	0.7%	1.1%	0.9%
Share of Total Tax Burden	39.3%	17.5%	8.5%	20.0%	14.8%
Suits Index	+0.235	-0.127	-0.138	-0.231	-0.248

*Residential property taxes are net of property tax refunds.

Table 3-5
Change in Effective Tax Rates Between 2014 and 2019

Population Decile	Personal Income Tax	Residential Property Taxes*	Other Property Taxes	State & Local Sales Taxes	All Other S&L Taxes
First	-0.1%	-0.6%	-0.6%	-1.0%	-1.5%
Second	0.1%	0.0%	-0.2%	-0.5%	-0.7%
Third	0.3%	0.2%	-0.1%	-0.4%	-0.5%
Fourth	0.5%	0.1%	-0.1%	-0.3%	-0.4%
Fifth	0.4%	0.1%	-0.1%	-0.2%	-0.3%
Sixth	0.2%	0.1%	0.0%	-0.1%	-0.3%
Seventh	0.2%	0.1%	-0.1%	-0.1%	-0.2%
Eighth	0.2%	0.1%	-0.1%	-0.1%	-0.2%
Ninth	0.1%	0.1%	0.1%	-0.1%	-0.2%
Tenth	0.0%	0.1%	-0.1%	0.0%	-0.1%
Total	0.1%	0.1%	-0.1%	-0.1%	-0.2%
Top 5%	0.0%	0.1%	0.0%	0.0%	-0.1%
Top 1%	-0.1%	0.1%	0.0%	0.0%	-0.1%

Calculated as the difference between the unrounded percentages in Tables 3-4 and 2-4.
*Residential property taxes are net of property tax refunds.

Individual Income Tax

The individual income tax is expected to account for 39.3 percent of the total state and local tax burden in 2019, up from 37.8 percent in 2014. Because of its graduated tax rate structure and allowance of personal exemptions and deductions, the individual income tax is, by design, progressive. As seen in *Table 3-4*, 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 and close to zero in the third decile, showing the impact of three refundable low-income credits (which can more than offset any income tax liabilities).[24] Effective tax rates rise steadily from 1.5 percent of income for the fourth decile to 6.3 percent for the tenth decile. The top 5 percent and 1 percent of households have even higher effective tax rates, at 6.8 and 7.6 percent respectively. The Suits index of +0.235 reflects its considerable progressivity.

Figure 3-4 clearly demonstrates the importance of the progressive income tax in offsetting most of the regressivity of other taxes.

What changed between 2014 and 2019? Income tax burdens are projected to increase by 25 percent between 2014 and 2019, exceeding the growth in income (at 23 percent). The overall average effective income tax rate rises from 4.5 percent to 4.6 percent of income. Effective tax rates are expected to rise in the 2nd through 9th deciles. In contrast, the effective tax rate is unchanged in the 10th decile, and it falls slightly for the top 1 percent. As a result, the income tax is projected to be less progressive in 2019, the Suits index falling from +0.258 to+0.235.

These changes in effective income tax rates across deciles are not the result of changes in tax policy. Minnesota's current income tax law is almost the same in 2019 as it was in 2014. The changes instead reflect the pattern of economic growth in the November 2016 Minnesota economic forecast. The forecast assumes strong wage growth, with real wage income per tax return growing by 10.5 percent. This explains the effective tax rate increases in the 2nd to 9th decile. Income tax rates are adjusted for inflation, but if income rises faster than inflation, effective tax rates will rise even if tax rates remain unchanged.

Falling effective tax rates at the top reflect the forecast's low growth of income from capital. Capital gains are projected to be lower in 2019 than they were in 2014, dividend growth is low, and income from flow-through businesses is expected to grow much more slowly than wages. Only the 10th decile has income growth below the overall average. Income growth for the top 1 percent (who pay most of the tax at the top income tax rate) is even lower. Because wage growth is much higher than the growth in income from capital, the income tax becomes less progressive.

Residential Property Taxes (After PTR)

Residential property taxes include the tax on 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 ($720 million in 2019) offset 12.0 percent of the residential property tax burden (down from 12.4 percent in 2014). The refunds offset a

[24] The impact of these refundable credits on the distribution of the overall 2014 tax burden is shown in *Chapter 4, Section C.*

much higher portion in the lowest five deciles. Residential property taxes (after PTR) account for 17.5 percent of the total state and local tax burden.

Effective tax rates rise from 1.6 percent of income in the 2nd decile to 2.7 percent of income in the 6th decile before falling to 2.4 percent in the 9th and 1.5 percent in the 10th decile. The Suits index of -0.127 (regressive) shows that the impact of the sharp drop in the 10th decile far outweighs the increasing effective tax rates over the lower deciles.

Although residential property tax burdens (after PTR) are regressive, they are noticeably less regressive than either sales taxes or "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 -0.204 – much closer to that of state and local sales tax (-0.231).

What changed between 2014 and 2019? The average effective tax (after rounding) is unchanged, but effective tax rates rise in several deciles. Residential property taxes after property tax refunds are projected to increase by 28 percent over 5 years, exceeding the projected 23 percent increase in income.

Home property tax burdens (after PTR) rise less rapidly than income. The increased effective tax rates are for rental property taxes.

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. Average effective tax rates generally fall between 2014 and 2019. Nonresidential property tax burdens are expected to rise only about half as fast as income.

State and Local Sales Taxes

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 2019, the effective state and local sales tax rate falls from 5.8 percent in the 2nd decile to 1.5 percent in the 10th decile. Sales taxes overall are much more regressive than property taxes (after PTR), with a Suits index of -0.231.

What changed between 2014 and 2019? The state general sales tax burden is expected to grow by 16 percent between 2014 and 2019, less than the 23 percent increase in income. In contrast, the sales tax on motor vehicles is expected to grow by 29 percent. Local sales taxes growth is projected at 27 percent. The overall effective tax rate falls by 0.1 percentage point, and every decile sees a reduction (though some round to zero in Table 3-5). The larger reductions in the lower deciles partly reflect the differential growth rates for the general and motor vehicle sales taxes. The sales taxes share of the total burden falls from 20.4 percent to 20.0 percent.

Other Taxes

The "all other taxes" category in *Table 3-4* 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 14.8 percent of Minnesota's state and local tax burden, and in 2019, their combined impact is more regressive than sales taxes (a Suits index of -0.248). Effective tax rates fall from 4.4 percent in the 2nd decile to 1.1 percent in the 10th decile.

What changed between 2014 and 2019? The other taxes share of the tax burden fell between 2014 and 2019 (from 16.2 to 14.8 percent). Many of these taxes grow much more slowly than income (motor fuels, cigarette, and alcohol excise taxes, motor vehicle registration tax, and the estate tax). Mortgage and deed and MinnesotaCare taxes grew faster than income. Effective tax rates fell in all deciles.

Summary of the Impact of Law Changes Between 2014 and 2019

Very few law changes were enacted in 2015 and 2016. No omnibus tax bill was enacted in either 2015 or 2016. Bills to conform to certain federal law changes were enacted in 2015 and early 2017, but those simply extended provisions of 2014 law into future years.

The most significant law change was the phased-in increase in the estate tax exclusion, which rose from $1.2 million for deaths in 2014 to $2 million for deaths in 2019. Although this increased the Suits index for the estate tax (from +0.822 to +0.846), it reduced the size of this very progressive tax and made the overall tax system more regressive.

Local sales taxes have also increased substantially with a sharp increase in the number of non-metro counties levying a 0.5 percent transit sales tax (first permitted in 2014). The number of non-metro counties with the optional transit sales tax rose from 6 in 2014 to 26 in 2017, and further expansion is expected. As a result, local sales taxes are projected to grow by 24 percent between 2014 and 2019. This is much faster than the state general sales tax, with an expected growth of 16 percent.

With few changes in state tax law, the change in tax burdens between 2014 and 2019 is driven primarily by the economic forecast.

Minnesota's Diversified Tax Portfolio in 2019

Table 3-6 shows how revenue is expected to grow between 2014 and 2019 for each of the components of Minnesota's tax portfolio. The varying growth rates change the mix of taxes. Income tax revenue growth, at 25 percent, far exceeds that of the general sales tax (17 percent). Property tax revenue growth is projected at 22 percent, but the growth rate for residential property taxes (27 percent) far exceeds that for nonresidential property taxes (13 percent). Homeowner property tax refunds are projected to grow faster than homestead property taxes (27 percent compared to 25 percent). Growth in rental property taxes (at 36 percent) far exceeds growth in renter property tax refunds (14 percent).

Table 3-6
Projected Growth in Tax Collections
Between 2014 and 2019 by Tax Type*

5-Year Growth	Taxes on Consumption	Taxes on Property	Taxes on Income
Less than 5%	Cigarette & Tobacco Motor Fuels		Corporate Estate**
5% to 10%	Alcohol		
11% to 15%	Solid Waste	Nonresidential Renter PTR	
16% to 20%	General Sales	Seasonal Recreation Motor Vehicle Reg.	
21% to 25%		Homestead	Income
26% to 30%	MinnesotaCare Motor Vehicle Sales	Mortgage & Deed Homeowner PTR	
31% to 35%			
36% to 40%		Rental Property	
41% to 45%	Gambling		

*Growth in collections for the total state and local tax portfolio: 20.5%. Income growth: 22.6%.
**Growth rate was affected by phase-in of higher exemption levels.

Taxes with high expected growth rates include gambling taxes (up 45 percent), the motor vehicle sales tax (29 percent), MinnesotaCare taxes (29 percent), and the mortgage and deed taxes (28 percent). Taxes with very low growth include excise taxes (tobacco, motor fuels, and alcohol), the corporate tax, and the estate tax (due to enacted cuts).

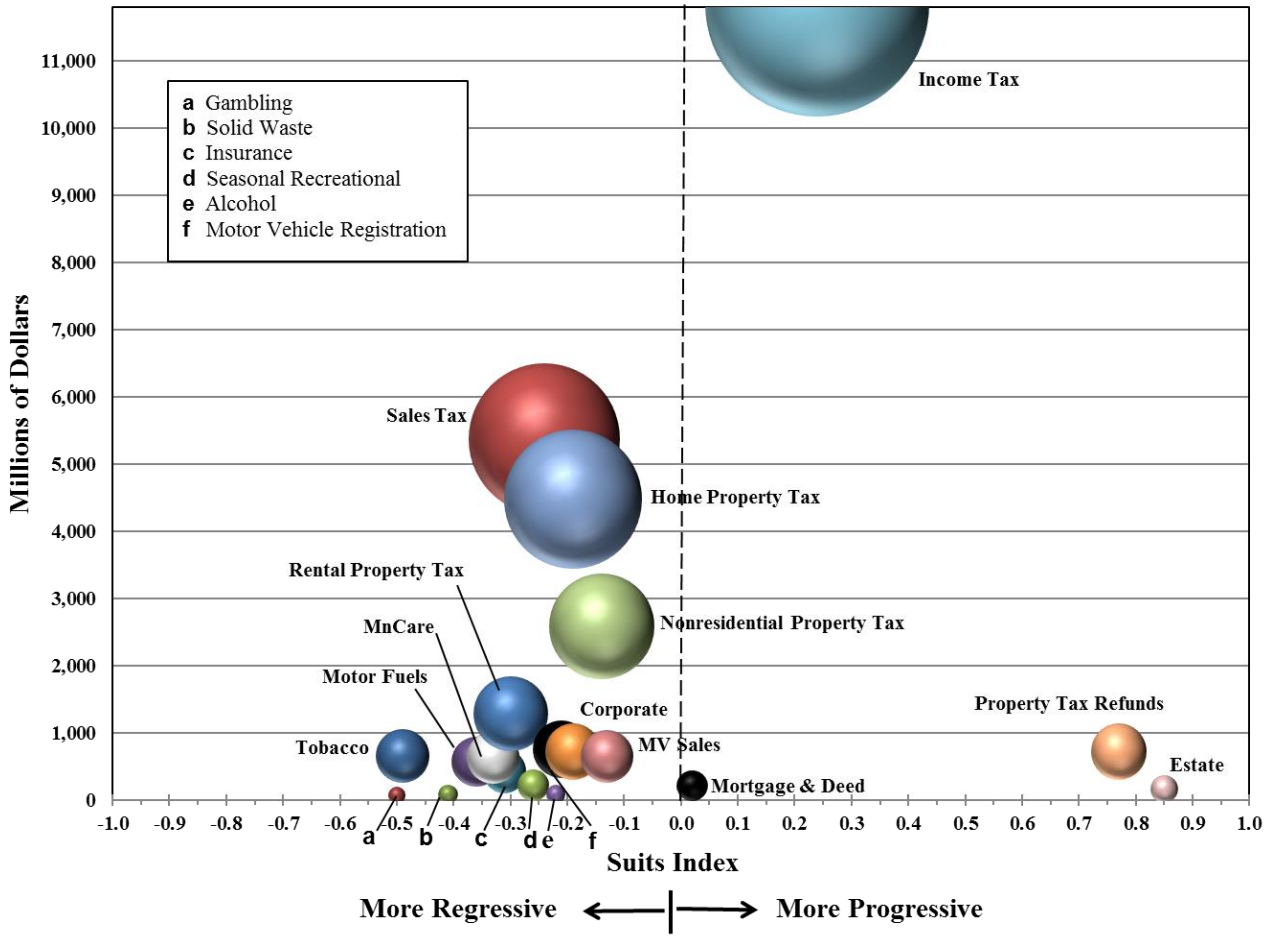
Different growth rates change the mix of taxes in Minnesota's tax portfolio. *Figure 3-5* illustrates the magnitude of the tax burden and Suits index for components of Minnesota's state and local tax system in 2019. Due to expected revenue growth, most of the circles are larger and have moved higher in *Figure 3-5* than they were in *Figure 2-5* (for 2014). The vertical dollar scale is unchanged, so growth in the income tax burden shifts its circle partly off the top of the chart.

Between 2014 and 2019, some circles have moved to the left (more regressive/less progressive) and some have moved to the right (less regressive/more progressive). One change – for the estate tax – reflects a change in law. The increased estate tax exemption level almost eliminated revenue growth but made the tax more progressive. Shifts of other circles to the right or left are primarily driven by changes in the distribution of income. Projected income growth is higher in deciles 1 to 5 (at 25 percent) than in deciles 6 to 9 (23 to 24 percent) or the 10th decile (less than 21 percent). Income growth for the top 1 percent of households is even lower at 18 percent.

This pattern of income growth makes the income tax less progressive. Its circle shifts to the left as the Suits index falls from +0.258 to +0.234. In contrast, reduced income inequality makes every other tax a bit less regressive, moving their circles a bit to the right.

Dollars of revenue from the three progressive taxes plus property tax refunds are projected to grow by 25 percent. Growth for the regressive taxes is much lower, at 18 percent – and every one of them also became slightly less regressive. As a result, the total state and local tax portfolio becomes less regressive. The overall Suits index falls from -0.028 to -0.024.

Figure 3-5
Dollars of Tax Burden and Suits Index
By Type of Tax (2019)



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Chapter 4: Additional Results

This chapter provides additional analysis of the 2014 results.

- Section A reports the 2014 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[25]

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 2014 and 2019 tax burdens. *Tables 4-1* through *4-4* are organized by income deciles rather than population deciles. To derive income deciles, households are ranked from lowest to highest income and divided into groups representing equal amounts of total income.

The distribution of tax by income deciles in these tables can be compared to the distribution by population deciles in *Tables 2-2, 2-3, 3-2,* and *3-3.* In both distributions, households are ranked by income level. In 2014, for example, each population decile of 266,091 households includes 10 percent of all households; each income decile with $20.8 billion of income includes 10 percent of total income. Because of their relatively low incomes, it takes 1,094,552 households in the first income decile to account for 10 percent of total income; in contrast, there are only 7,888 high-income households in the tenth decile, who also received 10 percent of total income.

Again using the year 2014 for illustration, the first income decile includes 41.1 percent of all households. Their share of total taxes (11.4 percent) exceeded their share of household income (10 percent). First income-decile households (with 10 percent of total income) paid less than 1 percent of the individual income tax, but paid 22 percent of the consumer sales tax, 33 percent of consumer excise taxes, and 20 percent of all business taxes borne by Minnesota residents.

The tenth income decile includes only 0.3 percent of all households. Their share of total taxes (9.9 percent) was lower than their share of household income (10 percent). They paid 18.4 percent of the individual income tax, but paid 3.2 percent of the consumer sales tax, 1.6 percent of excise taxes, and 6.3 percent of business taxes borne by Minnesota residents.

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

[25] Unlike some earlier studies, *Tables 4-1* through *4-4* do not report the results separately for those receiving the top 1 percent of income. Because less than 35 households would be included in that group, reporting such information separately would raise disclosure issues.

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Table 4-1 2014 Income Deciles - Amounts ($ Thousands)

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$36,420 & under	1,094,552	$20,823,037	$25,615	$147,240	$655,795	$376,760	$1,032,555	-$294,444	$84,046	$418,159	$293,130	$38,830
Second	$36,421 - $57,006	452,571	20,815,757	561,076	93,614	399,681	228,575	628,256	-141,327	53,769	195,261	225,762	23,140
Third	$57,007 - $77,538	312,682	20,820,986	748,093	84,213	348,078	202,631	550,709	-79,110	48,647	149,716	208,449	21,825
Fourth	$77,539 - $99,302	237,415	20,825,315	838,487	79,542	321,464	188,971	510,435	-50,033	46,580	125,001	194,378	21,142
Fifth	$99,303 - $125,038	187,364	20,817,735	934,523	73,750	292,941	170,791	463,732	-17,755	43,226	105,135	175,927	18,846
Sixth	$125,039 - $158,854	148,507	20,841,509	992,782	70,098	267,402	161,838	429,241	-2,319	41,324	90,238	157,393	20,229
Seventh	$158,855 - $230,126	110,873	20,811,435	1,058,548	64,369	235,107	145,980	381,087	-1,261	37,496	73,897	129,500	18,742
Eighth	$230,127 - $388,142	72,674	20,867,275	1,172,105	57,868	196,878	134,197	331,075	-1,086	34,903	56,718	98,826	19,012
Ninth	$388,143 - $985,869	36,387	20,755,353	1,382,862	49,966	151,096	120,448	271,544	-839	33,296	37,582	66,365	22,311
Tenth	$985,870 & over	7,888	20,814,548	1,744,555	38,415	94,627	103,591	198,217	-101	31,687	19,767	155,793	27,709
TOTALS		2,660,914	$208,192,948	$9,458,645	$759,076	$2,963,068	$1,833,781	$4,796,849	-$588,275	$454,973	$1,271,473	$1,705,522	$231,786
Top 5%	Over $3,341,356	1,186	$10,416,712	$920,808	$16,165	$38,364	$44,936	$83,300	-$3	$14,548	$7,023	$100,327	$13,153

Income Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total [1]	Nonresidential Local Property Taxes	Other Local Taxes [2]	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	$421,723	$196,708	$81,008	$277,716	$724,339	$298,731	$83,913	$1,106,983	$1,076,795	$668,337	$1,745,131	$2,852,115
Second	463,886	117,722	44,914	162,636	648,042	200,458	51,060	899,560	1,228,739	410,812	1,639,551	2,539,111
Third	479,650	55,866	43,314	99,179	599,120	198,518	44,639	842,277	1,365,281	367,261	1,732,542	2,574,819
Fourth	468,668	30,170	42,087	72,258	561,394	182,962	41,482	785,838	1,420,556	344,977	1,765,533	2,551,370
Fifth	420,412	17,968	35,707	53,675	495,035	186,920	37,888	719,843	1,483,352	314,031	1,797,383	2,517,226
Sixth	407,060	8,338	41,605	49,943	475,712	194,859	34,784	705,355	1,498,555	300,431	1,798,986	2,504,341
Seventh	351,490	5,082	34,963	40,045	404,471	256,806	31,630	692,907	1,488,840	273,537	1,762,377	2,455,284
Eighth	304,650	3,329	44,099	47,428	360,453	115,322	27,459	503,234	1,517,011	252,409	1,769,420	2,272,654
Ninth	207,126	1,037	57,743	58,781	271,623	116,574	22,737	410,934	1,632,149	230,936	1,863,085	2,274,019
Tenth	71,408	208	80,480	80,688	153,365	103,094	16,830	273,289	2,011,792	204,251	2,216,043	2,489,332
TOTALS	$3,596,073	$436,427	$505,921	$942,348	$4,693,553	$1,854,244	$392,422	$6,940,219	$14,723,070	$3,366,981	$18,090,051	$25,030,270
Top 5%	$16,529	$10	$38,531	$38,541	$55,264	$43,444	$7,295	$106,002	$1,065,578	$89,743	$1,155,320	$1,261,323

[1] Includes seasonal recreational residential (cabins)

[2] Includes taconite production tax

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Table 4-2 2014 Income Deciles - Effective Tax Rates

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$36,420 & under	1,094,552	$20,823,037	0.1%	0.7%	3.1%	1.8%	5.0%	- 1.4%	0.4%	2.0%	1.4%	0.2%
Second	$36,421 - $57,006	452,571	20,815,757	2.7%	0.4%	1.9%	1.1%	3.0%	- 0.7%	0.3%	0.9%	1.1%	0.1%
Third	$57,007 - $77,538	312,682	20,820,986	3.6%	0.4%	1.7%	1.0%	2.6%	- 0.4%	0.2%	0.7%	1.0%	0.1%
Fourth	$77,539 - $99,302	237,415	20,825,315	4.0%	0.4%	1.5%	0.9%	2.5%	- 0.2%	0.2%	0.6%	0.9%	0.1%
Fifth	$99,303 - $125,038	187,364	20,817,735	4.5%	0.4%	1.4%	0.8%	2.2%	- 0.1%	0.2%	0.5%	0.8%	0.1%
Sixth	$125,039 - $158,854	148,507	20,841,509	4.8%	0.3%	1.3%	0.8%	2.1%	0.0%	0.2%	0.4%	0.8%	0.1%
Seventh	$158,855 - $230,126	110,873	20,811,435	5.1%	0.3%	1.1%	0.7%	1.8%	0.0%	0.2%	0.4%	0.6%	0.1%
Eighth	$230,127 - $388,142	72,674	20,867,275	5.6%	0.3%	0.9%	0.6%	1.6%	0.0%	0.2%	0.3%	0.5%	0.1%
Ninth	$388,143 - $985,869	36,387	20,755,353	6.7%	0.2%	0.7%	0.6%	1.3%	0.0%	0.2%	0.2%	0.3%	0.1%
Tenth	$985,870 & over	7,888	20,814,548	8.4%	0.2%	0.5%	0.5%	1.0%	0.0%	0.2%	0.1%	0.7%	0.1%
TOTALS		2,660,914	$208,192,948	4.5%	0.4%	1.4%	0.9%	2.3%	- 0.3%	0.2%	0.6%	0.8%	0.1%
Top 5%	Over $3,341,356	1,186	$10,416,712	8.8%	0.2%	0.4%	0.4%	0.8%	0.0%	0.1%	0.1%	1.0%	0.1%

Income Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total [1]	Nonresidential Local Property Taxes	Other Local Taxes [2]	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	2.0%	0.9%	0.4%	1.3%	3.5%	1.4%	0.4%	5.3%	5.2%	3.2%	8.4%	13.7%
Second	2.2%	0.6%	0.2%	0.8%	3.1%	1.0%	0.2%	4.3%	5.9%	2.0%	7.9%	12.2%
Third	2.3%	0.3%	0.2%	0.5%	2.9%	1.0%	0.2%	4.0%	6.6%	1.8%	8.3%	12.4%
Fourth	2.3%	0.1%	0.2%	0.3%	2.7%	0.9%	0.2%	3.8%	6.8%	1.7%	8.5%	12.3%
Fifth	2.0%	0.1%	0.2%	0.3%	2.4%	0.9%	0.2%	3.5%	7.1%	1.5%	8.6%	12.1%
Sixth	2.0%	0.0%	0.2%	0.2%	2.3%	0.9%	0.2%	3.4%	7.2%	1.4%	8.6%	12.0%
Seventh	1.7%	0.0%	0.2%	0.2%	1.9%	1.2%	0.2%	3.3%	7.2%	1.3%	8.5%	11.8%
Eighth	1.5%	0.0%	0.2%	0.2%	1.7%	0.6%	0.1%	2.4%	7.3%	1.2%	8.5%	10.9%
Ninth	1.0%	0.0%	0.3%	0.3%	1.3%	0.6%	0.1%	2.0%	7.9%	1.1%	9.0%	11.0%
Tenth	0.3%	0.0%	0.4%	0.4%	0.7%	0.5%	0.1%	1.3%	9.7%	1.0%	10.6%	12.0%
TOTALS	1.7%	0.2%	0.2%	0.5%	2.3%	0.9%	0.2%	3.3%	7.1%	1.6%	8.7%	12.0%
Top 5%	0.2%	0.0%	0.4%	0.4%	0.5%	0.4%	0.1%	1.0%	10.2%	0.9%	11.1%	12.1%

[1] Includes seasonal recreational residential (cabins).

[2] Includes taconite production tax

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Table 4-3 2019 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	$43,058 & under	1,130,157	$25,538,318	$103,468	$135,442	$742,553	$423,503	$1,166,056	-$388,962	$86,654	$417,530	$357,838	$45,459
Second	$43,059 - $66,995	470,579	25,530,237	768,916	87,915	462,632	262,552	725,184	-178,487	56,458	197,196	275,092	27,253
Third	$66,996 - $90,842	326,887	25,550,945	968,756	80,645	411,065	238,837	649,901	-96,391	52,250	151,801	254,543	26,505
Fourth	$90,843 - $116,283	248,592	25,529,065	1,065,193	75,559	379,380	219,947	599,327	-49,194	49,380	127,056	235,569	24,474
Fifth	$116,284 - $145,771	196,673	25,516,674	1,173,159	70,712	348,553	201,863	550,416	-6,988	46,346	108,316	216,860	23,268
Sixth	$145,772 - $185,141	156,548	25,539,714	1,237,504	67,799	320,075	192,454	512,529	-147	44,568	94,837	191,350	23,935
Seventh	$185,142 - $261,539	118,326	25,563,921	1,307,716	62,271	284,088	173,253	457,341	0	40,340	78,857	159,061	21,770
Eighth	$261,540 - $431,521	78,303	25,509,189	1,445,920	56,496	240,234	161,460	401,694	0	38,041	61,348	123,513	23,451
Ninth	$431,522 - $1,061,701	40,577	25,538,291	1,680,732	48,846	187,627	145,076	332,703	0	35,881	42,505	81,295	26,995
Tenth	$1,061,702 & over	9,369	25,513,867	2,092,549	38,770	120,480	130,249	250,729	0	35,311	23,074	167,312	35,843
TOTALS		2,776,011	$255,330,219	11,843,912	724,453	3,496,687	2,149,193	5,645,880	-720,170	485,229	1,302,519	2,062,433	278,954
Top 5%	Over $3,268,613	1,494	$12,767,062	$1,096,077	$16,851	$49,059	$58,750	$107,809	$0	$16,840	$8,501	$111,318	$17,721

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes [2]
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total [1]		
First	$525,607	$265,862	$107,566	$373,429	$928,952	$342,246	$97,355
Second	577,696	159,986	60,147	220,134	823,399	238,454	60,454
Third	595,187	76,264	60,515	136,779	756,135	235,845	54,014
Fourth	583,850	42,447	55,777	98,224	706,284	193,194	49,902
Fifth	520,802	24,205	49,438	73,643	619,396	239,807	46,007
Sixth	491,115	12,847	56,775	69,621	583,143	206,147	42,543
Seventh	446,403	7,138	46,993	54,132	516,411	261,438	38,700
Eighth	378,021	4,077	60,803	64,880	453,282	144,440	33,929
Ninth	266,830	1,435	77,308	78,744	352,708	133,514	28,176
Tenth	96,364	348	113,969	114,317	212,407	129,455	21,253
TOTALS	$4,481,875	$594,610	$689,292	$1,283,902	$5,952,118	$2,124,540	$472,333
Top 5%	$23,490	$14	$56,757	$56,772	$80,541	$55,624	$9,394

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
$1,368,553	$1,211,357	$712,127	$1,923,485	$3,292,038
1,122,308	1,513,503	446,022	1,959,525	3,081,833
1,045,994	1,679,425	408,585	2,088,010	3,134,004
949,381	1,748,970	378,393	2,127,363	3,076,744
905,210	1,832,108	349,980	2,182,088	3,087,298
831,833	1,836,265	336,110	2,172,375	3,004,208
816,549	1,822,386	304,970	2,127,356	2,943,905
631,651	1,864,188	286,276	2,150,463	2,782,114
514,398	1,986,840	262,116	2,248,956	2,763,354
363,115	2,400,249	243,338	2,643,587	3,006,702
$8,548,991	$17,895,293	$3,727,917	$21,623,210	$30,172,201
$145,559	$1,263,883	$111,233	$1,375,116	$1,520,675

[1] Includes seasonal recreational residential (cabins)

[2] Includes taconite production tax

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Table 4-4 2019 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	$43,058 & under	1,130,157	$25,538,318	0.4%	0.5%	2.9%	1.7%	4.6%	- 1.5%	0.3%	1.6%	1.4%	0.2%
Second	$43,059 - $66,995	470,579	25,530,237	3.0%	0.3%	1.8%	1.0%	2.8%	- 0.7%	0.2%	0.8%	1.1%	0.1%
Third	$66,996 - $90,842	326,887	25,550,945	3.8%	0.3%	1.6%	0.9%	2.5%	- 0.4%	0.2%	0.6%	1.0%	0.1%
Fourth	$90,843 - $116,283	248,592	25,529,065	4.2%	0.3%	1.5%	0.9%	2.3%	- 0.2%	0.2%	0.5%	0.9%	0.1%
Fifth	$116,284 - $145,771	196,673	25,516,674	4.6%	0.3%	1.4%	0.8%	2.2%	0.0%	0.2%	0.4%	0.8%	0.1%
Sixth	$145,772 - $185,141	156,548	25,539,714	4.8%	0.3%	1.3%	0.8%	2.0%	0.0%	0.2%	0.4%	0.7%	0.1%
Seventh	$185,142 - $261,539	118,326	25,563,921	5.1%	0.2%	1.1%	0.7%	1.8%	0.0%	0.2%	0.3%	0.6%	0.1%
Eighth	$261,540 - $431,521	78,303	25,509,189	5.7%	0.2%	0.9%	0.6%	1.6%	0.0%	0.1%	0.2%	0.5%	0.1%
Ninth	$431,522 - $1,061,701	40,577	25,538,291	6.6%	0.2%	0.7%	0.6%	1.3%	0.0%	0.1%	0.2%	0.3%	0.1%
Tenth	$1,061,702 & over	9,369	25,513,867	8.2%	0.2%	0.5%	0.5%	1.0%	0.0%	0.1%	0.1%	0.7%	0.1%
TOTALS		2,776,011	$255,330,219	4.6%	0.3%	1.4%	0.8%	2.2%	- 0.3%	0.2%	0.5%	0.8%	0.1%
Top 5%	Over $3,268,613	1,494	$12,767,062	8.6%	0.1%	0.4%	0.5%	0.8%	0.0%	0.1%	0.1%	0.9%	0.1%

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes [2]
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total [1]		
First	2.1%	1.0%	0.4%	1.5%	3.6%	1.3%	0.4%
Second	2.3%	0.6%	0.2%	0.9%	3.2%	0.9%	0.2%
Third	2.3%	0.3%	0.2%	0.5%	3.0%	0.9%	0.2%
Fourth	2.3%	0.2%	0.2%	0.4%	2.8%	0.8%	0.2%
Fifth	2.0%	0.1%	0.2%	0.3%	2.4%	0.9%	0.2%
Sixth	1.9%	0.1%	0.2%	0.3%	2.3%	0.8%	0.2%
Seventh	1.7%	0.0%	0.2%	0.2%	2.0%	1.0%	0.2%
Eighth	1.5%	0.0%	0.2%	0.3%	1.8%	0.6%	0.1%
Ninth	1.0%	0.0%	0.3%	0.3%	1.4%	0.5%	0.1%
Tenth	0.4%	0.0%	0.4%	0.4%	0.8%	0.5%	0.1%
TOTALS	1.8%	0.2%	0.3%	0.5%	2.3%	0.8%	0.2%
Top 5%	0.2%	0.0%	0.4%	0.4%	0.6%	0.4%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
5.4%	4.7%	2.8%	7.5%	12.9%
4.4%	5.9%	1.7%	7.7%	12.1%
4.1%	6.6%	1.6%	8.2%	12.3%
3.7%	6.9%	1.5%	8.3%	12.1%
3.5%	7.2%	1.4%	8.6%	12.1%
3.3%	7.2%	1.3%	8.5%	11.8%
3.2%	7.1%	1.2%	8.3%	11.5%
2.5%	7.3%	1.1%	8.4%	10.9%
2.0%	7.8%	1.0%	8.8%	10.8%
1.4%	9.4%	1.0%	10.4%	11.8%
3.3%	7.0%	1.5%	8.5%	11.8%
1.1%	9.9%	0.9%	10.8%	11.9%

[1] Includes seasonal recreational residential (cabins).

[2] Includes taconite production tax

Tables 4-2 and *4-4* show effective tax rates by income decile in 2014 and 2019. A comparison with the effective tax rates for population deciles reveals some differences. First, the effective tax rate for the first income decile (13.7 percent) was much lower than that for the first population decile (29.9 percent). The first *income* decile included more than four times as many households as the first *population* decile. As a result, the effective tax rate for the first income decile is roughly equal to the average effective tax rate for households in the first four population deciles.

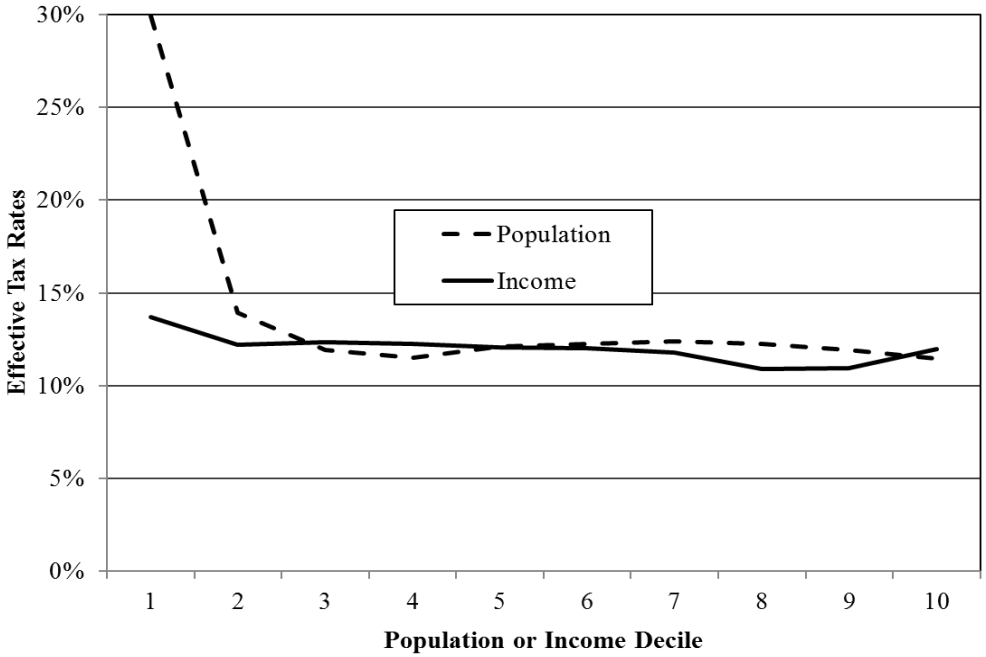
The pattern of effective tax rates also differs for the top deciles. The tenth income decile (with 7,888 households) had an effective tax rate of 12.0 percent. In contrast, the tenth population decile (with about 266,091 households) had an effective tax rate of 11.5 percent.

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

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

The use of income deciles provides more detailed information about the burden on higher income households, but less information about the 58 percent of households who are combined in the first two income deciles.

Figure 4-1
State and Local Effective Tax Rates for 2014
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 28 percent federal tax bracket, each additional dollar of itemized deductions lowers federal income tax by 28 cents. As a result, 28 percent of deductible state and local taxes would be borne by the federal government in lower tax revenue. If no adjustment is made for this federal tax offset, the Minnesota tax burden is arguably overstated. Because itemizing deductions is more common for higher income households (and because they face higher federal tax rates), the federal tax offset will reduce taxes by much more in the upper deciles. A tax system that looks proportional in the absence of such an adjustment might look quite regressive after such an adjustment is made. A regressive system would look even more regressive.

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

There is a strong argument, however, against making such an adjustment in this study. This study estimates the burden of Minnesota taxes in a multistate context. The incidence of Minnesota taxes depends on the level of taxes in other states. If all states levy deductible taxes, then the federal government presumably makes up for the lost revenue by raising 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 4-5* and *4-6*, and *Figure 4-2*. For all households combined, the federal offset for non-business taxes would reduce Minnesota tax burdens by almost 7.5 percent, reducing the effective tax rate from 12.0 percent to 11.1 percent of income. There are small changes in the lowest deciles, which include few who itemize deductions. As expected, the impact of the federal tax offset rises with income. Despite the federal Alternative Minimum Tax and the limitation on itemized deductions for high-income taxpayers, the effective tax rate in the tenth decile would fall from 11.5 percent to 9.9 percent. The adjusted tax burden for all taxes combined is noticeably more regressive, with the full-sample Suits index falling from-0.029 to -0.063.

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

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

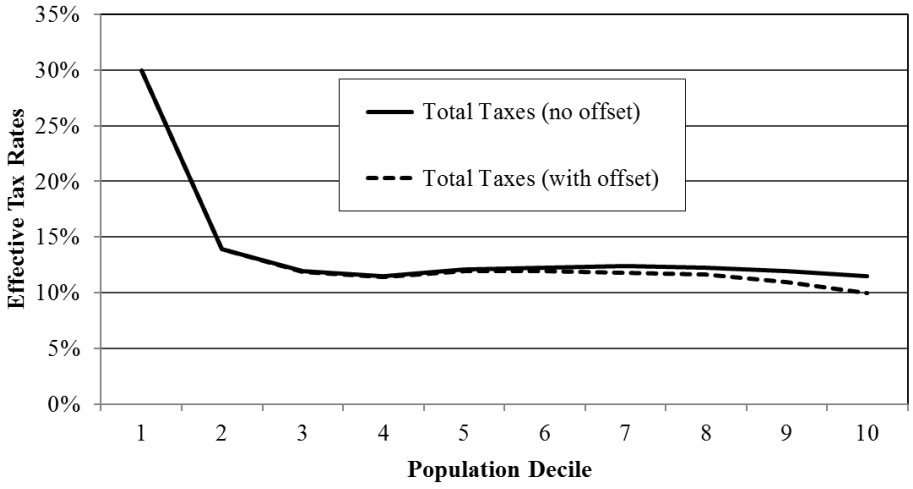
Table 4-5
Impact of Federal Tax Offset on Effective State and Local Tax Rates by Population Decile
(Minnesota Residents, 2014)

Population Decile	Household Income	Effective Tax Rate		
		No Federal Tax Offset	Change Due to Federal Tax Offset	Adjusted for Federal Tax Offset
First	$ 11,262 & Under	29.9%	0.0%	29.9%
Second	11,263 - $ 18,218	13.9%	0.0%	13.9%
Third	18,219 - 24,767	11.9%	0.0%	11.9%
Fourth	26,141 - 33,333	11.5%	0.1%	11.4%
Fifth	35,361 - 43,553	12.1%	0.2%	12.0%
Sixth	46,142 - 56,666	12.3%	0.3%	12.0%
Seventh	59,618 - 73,485	12.4%	0.6%	11.8%
Eighth	77,666 - 96,670	12.2%	0.6%	11.6%
Ninth	102,786 - 140,691	11.9%	1.0%	11.0%
Tenth	$ 147,969 & Over	11.5%	1.5%	9.9%
Total		12.0%	1.0%	11.1%
Top 5%	$ 213,506 & Over	11.3%	1.6%	9.7%
Top 1%	$ 512,192 & Over	11.5%	2.1%	9.4%

Table 4-6
Suits Index With and Without Federal Tax Offset

	Without Offset	With Offset
All Taxes	-0.029	-0.063

Figure 4-2
Effective Tax Rates for 2014
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 Credit are considered "negative taxes." Because these negative taxes are included, the average income tax rate in each of the first three 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 4-7* shows the magnitudes of those payments in 2014. That table also shows the full-sample Suits index for each of the major categories of payments.

Table 4-7
Population-Decile Suits Index for Refundable Credits and Property Tax Refund Payments in 2014

Payments	Amount ($ Thousands)	Population-Decile Suits Index
Income Tax Credits		
Working Family Credit	$ 251,123	+0.892
Dependent Care Credit	15,446	+0.905
K-12 Education Credit	13,196	+0.893
Subtotal	$ 279,765	+0.893
Property Tax Refund		
Homeowners	$ 377,597	+0.640
Renters	210,678	+0.879
Subtotal	$ 588,275	+0.725
Total	$ 868,040	+0.779

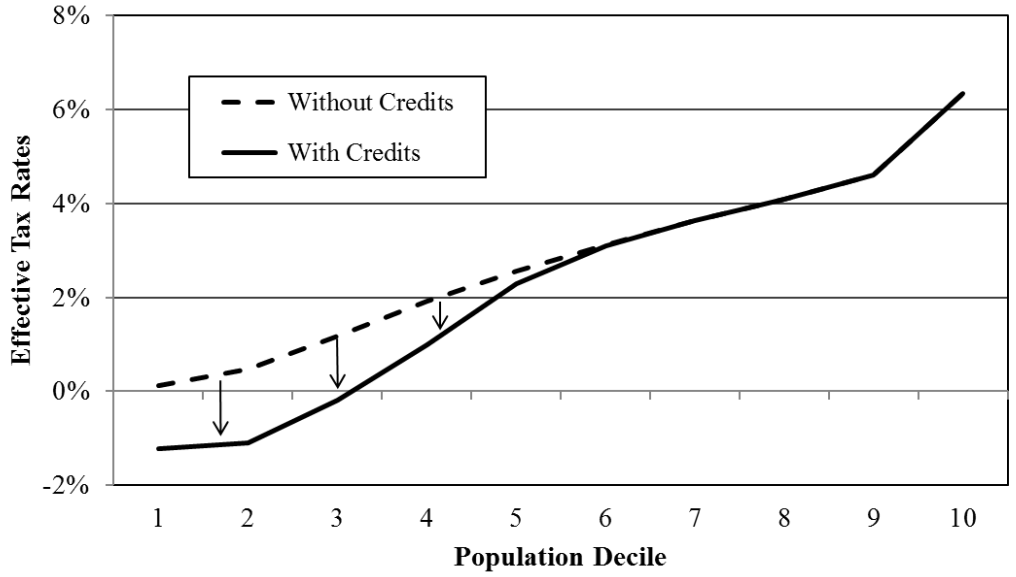
Total dollars of property tax refunds and refundable credits increased by 30.5 percent between 2012 and 2014, growing much faster than total tax collections (which increased by 11.0 percent). The refundable income tax credits rose by 31.1 percent; property tax refunds rose by 30.3 percent. Homeowner property tax refunds rose by 39.6 percent, and renter refunds rose by 16.4 percent.

Table 4-8 and *Figure 4-3* show the impact of the refundable income tax credits on effective income tax rates by population decile in 2014. Without those credits, effective tax rates would be noticeably higher in each of the first five deciles. For example, the effective income tax rate in the second decile would rise from -1.1 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 +0.225 rather than the +0.258.

Table 4-8
Impact of Refundable Income Tax Credits on Effective Income Tax Rates (2014)

Population Decile	Household Income	Effective Tax Rates (Income Tax)		
		With Credits	Change If No Credits	Without Credits
First	$ 11,262 & Under	-1.2%	+1.3%	0.1%
Second	11,263 - $ 18,218	-1.1%	+1.6%	0.5%
Third	18,219 - 26,140	-0.2%	+1.4%	1.2%
Fourth	26,141 - 35,360	1.0%	+0.9%	1.9%
Fifth	35,361 - 46,141	2.3%	+0.3%	2.6%
Sixth	46,142 - 59,617	3.1%	0.0%	3.1%
Seventh	59,618 - 77,665	3.6%	0.0%	3.6%
Eighth	77,666 - 102,785	4.1%	0.0%	4.1%
Ninth	102,786 - 147,968	4.6%	0.0%	4.6%
Tenth	147,969 & Over	6.3%	0.0%	6.3%
Total		4.5%	+0.2%	4.7%

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



In the absence of property tax refunds, residential property taxes would be almost as regressive as the sales tax, with a Suits index of -0.206 rather than -0.132. As shown in *Figure 4-4* and the last column of *Table 4-9*, effective tax rates would be 3.2 percent in the second decile and fall to 1.4 percent in the tenth decile. Property tax refunds reduce effective tax rates in the first eight deciles. With the PTR, effective tax rates fall to 1.5 percent in the second decile, then rise to 2.4 percent in the sixth decile before falling to 2.2 percent in the ninth decile and 1.4 percent in the tenth. Net residential property taxes (after PTR) are still regressive (with a full-sample Suits index of -0.132, but much less regressive than in the absence of the PTR.

Table 4-9
Residential Property Taxes Before and After Property Tax Refunds for 2014 (Homesteads and Rental Housing)

Population Decile	Household Income	Effective Tax Rates (Property Tax)		
		With PTR	Change If No PTR	Without PTR
First	$ 11,262 & Under	4.1%	+2.5%	6.6%
Second	11,263 - $ 18,218	1.5%	+1.7%	3.2%
Third	18,219 - 26,140	1.6%	+1.5%	3.1%
Fourth	26,141 - 35,360	1.9%	+1.0%	2.9%
Fifth	35,361 - 46,141	2.3%	+0.7%	3.0%
Sixth	46,142 - 59,617	2.4%	+0.6%	3.0%
Seventh	59,618 - 77,665	2.4%	+0.3%	2.7%
Eighth	77,666 - 102,785	2.4%	+0.2%	2.6%
Ninth	102,786 - 147,968	2.2%	0.0%	2.2%
Tenth	147,969 & Over	1.4%	0.0%	1.4%
Total		1.9%	+0.3%	2.2%

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

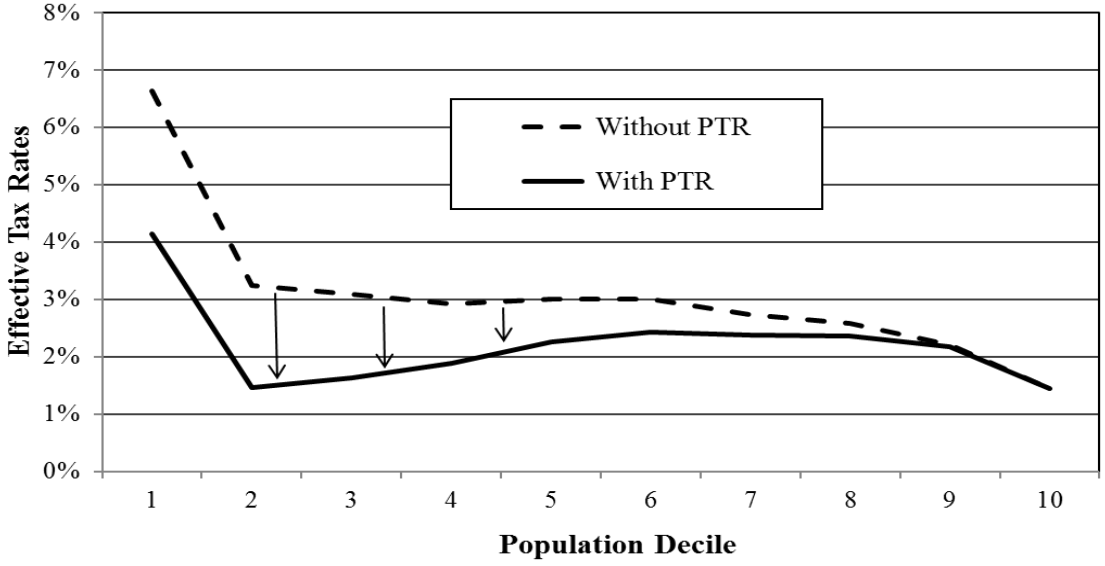
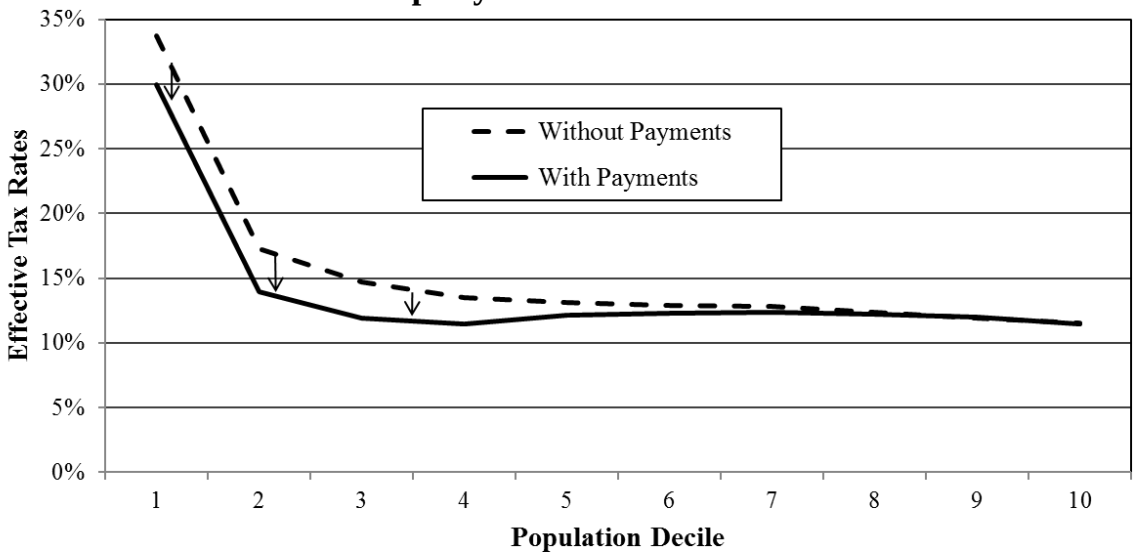


Table 4-10 and *Figure 4-5* show the combined impact of both the income tax credits and property tax refunds on the overall effective tax rates by population decile. Without the credits or property tax refunds, effective tax rates would be higher in the first eight deciles. These payments make the overall tax system less regressive. In their absence, the full-sample Suits index for all taxes would be -0.054 rather than -0.029.

Table 4-10
Combined Impact of Property Tax Refunds and Refundable Income Tax Credits on Effective State and Local Tax Rates

Population Decile	Household Income	Effective Tax Rates (All Taxes)		
		With PTR & Credits	Change If No PTR or Credits	Without PTR or Credits
First	$ 11,262 & Under	29.9%	+3.8%	33.7%
Second	11,263 - $ 18,218	13.9%	+3.4%	17.3%
Third	18,219 - 26,140	11.9%	+2.8%	14.7%
Fourth	26,141 - 35,360	11.5%	+2.0%	13.5%
Fifth	35,361 - 46,141	12.1%	+1.0%	13.1%
Sixth	46,142 - 59,617	12.3%	+0.6%	12.9%
Seventh	59,618 - 77,665	12.4%	+0.4%	12.8%
Eighth	77,666 - 102,785	12.2%	+0.2%	12.4%
Ninth	102,786 - 147,968	11.9%	0.0%	11.9%
Tenth	147,969 & Over	11.5%	0.0%	11.5%
Total		12.0%	+0.4%	12.4%

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



Section D
Incremental Incidence: Estimating the Incidence of a Change in Business Taxes

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.

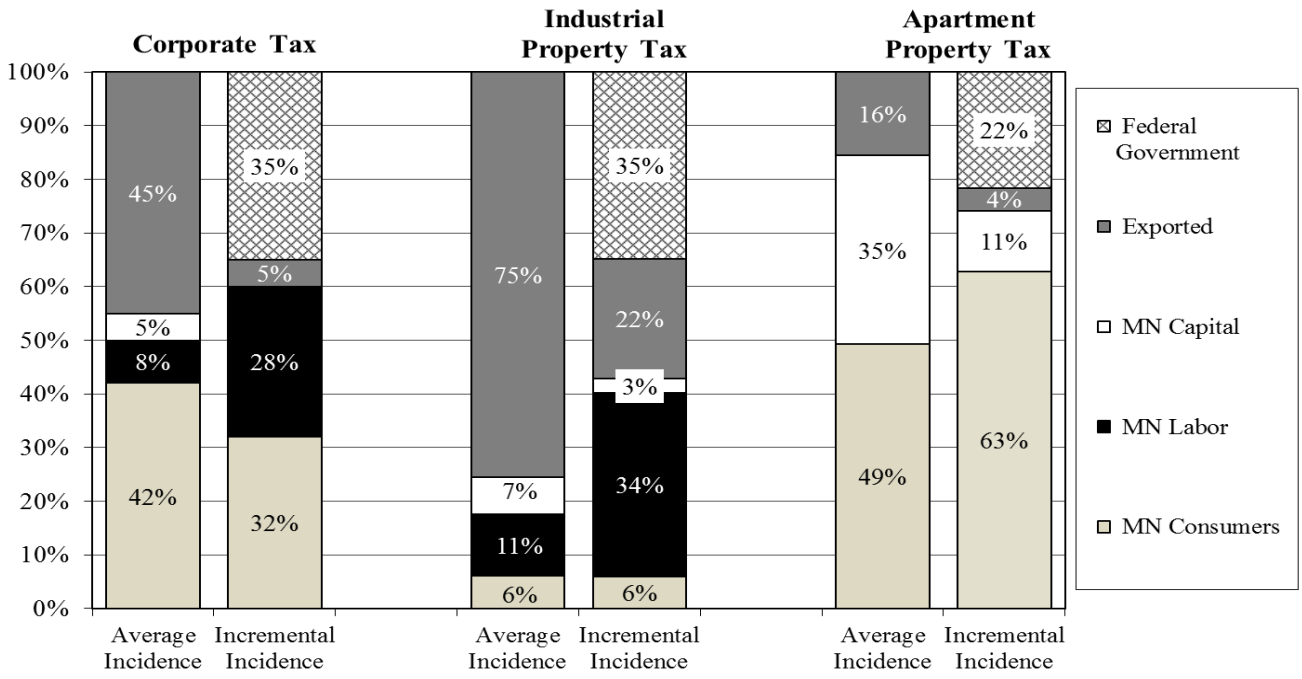
The portion of Minnesota's tax representing the national average tax on capital has a different incidence than the "Minnesota differential." The tax burden reported in this study is the "average" incidence of a tax that is partly a tax levied at average national rates and partly a tax in excess of what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

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.)

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.[26] 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 35 percent for those paying the federal corporate tax, while the federal tax rate for non-corporate businesses is assumed to be 20 percent.

Figure 4-6
Average vs. Incremental Incidence



[26] 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 the only state that completes a comprehensive tax incidence study on a regular basis. This makes it difficult to know how to put the Minnesota results in context. Given the questions raised about how Minnesota compares to other states, this section summarizes the results of a 50-state study of state and local tax incidence. That study, entitled *Who Pays? A Distributional Analysis of Tax Systems in All 50 States* (5th Edition), was published by the Institute on Taxation and Economic Policy (ITEP) in January 2015.[27] It uses a methodology that is relatively close to what is used in this study.

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

- The population is limited to non-senior households.
- The results are based on 2012 income levels adjusted for the impact of tax changes enacted in 2013 and 2014.
- Because all 50 states are included, there is obviously a less detailed analysis of each individual state's tax structure than in Minnesota's studies.
- The assumptions about business tax incidence are different.
- The results include only 7 population groups rather than either population deciles or income deciles:
  - Bottom 20 percent
  - Second 20 percent
  - Third 20 percent
  - Fourth 20 percent
  - Next 15 percent
  - Next 4 percent
  - Top 1 percent

Despite these differences, the ITEP Study's "7-point" Suits index for Minnesota (-0.015) is not far from a similar "7-point" Suits index calculated from this study's database. If limited to non-senior households, the "7-point" Suits index in 2014 would be -0.026.

[27] Available at: www.itepnet.org/whopays.htm. The "7-point" Suits indexes were calculated by Jeff Van Wychen for Growth and Justice. A 2015 Growth and Justice policy brief with a more in-depth analysis of state-by-state Suits indexes based on data from the 2015 ITEP report can be found at their website.

Table 4-11 lists the 7-point Suits indexes for each state (for non-senior households), based on the ITEP study. The variation across states is striking. Although the tax systems of only three states are progressive (with a Suits index greater than zero), six states are estimated to be less regressive than Minnesota. In contrast, nineteen states had Suits indexes below -0.100, and six of those were below -0.200. The 7-point Suits based on the average of effective tax rates for the seven population groups in all states was -0.069.

Minnesota (at -0.015 in that study) was among the less regressive states. This would be expected for several reasons:

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

Table 4-11 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 9.8 percent of income) was above the U.S. average reported by ITEP (at 8.6 percent). The correlation (R) between the average effective tax rate and the Suits index (+0.63) suggests that the tax structures of states with high average taxes tend to be less regressive. The ten most regressive tax structures are in states with average effective tax rates at or below 8.0 percent. In contrast, of the 21 states with Suits indexes showing below-average regressivity, only four (Montana, Delaware, Idaho, and South Carolina) had average effective tax rates at or below 8.0 percent.

Table 4-11
ITEP "7-Point" Suits Index by State
Non-Senior Households in 2012 (2015 Law)

Listed Alphabetically		
State	**7-Point Suits Index**	**Average Effective Tax Rate**
Alabama	-0.139	7.4%
Alaska	-0.127	3.7%
Arizona	-0.120	8.0%
Arkansas	-0.095	9.5%
California	0.046	9.5%
Colorado	-0.084	7.3%
Connecticut	-0.084	9.7%
Delaware	0.028	6.0%
Florida	-0.253	5.6%
Georgia	-0.072	8.8%
Hawaii	-0.080	9.9%
Idaho	-0.021	8.0%
Illinois	-0.124	9.4%
Indiana	-0.102	9.2%
Iowa	-0.054	9.3%
Kansas	-0.101	8.3%
Kentucky	-0.059	9.6%
Louisiana	-0.122	7.7%
Maine	-0.005	9.6%
Maryland	-0.030	10.1%
Massachusetts	-0.086	8.4%
Michigan	-0.078	8.4%
Minnesota	**-0.015**	**9.8%**
Mississippi	-0.102	8.6%
Missouri	-0.055	8.5%
Montana	-0.014	6.3%
Nebraska	-0.055	9.3%
Nevada	-0.222	4.8%
New Hampshire	-0.128	6.0%
New Jersey	-0.005	9.9%
New Mexico	-0.098	8.6%
New York	-0.015	11.9%
North Carolina	-0.051	8.6%
North Dakota	-0.144	6.1%
Ohio	-0.076	9.4%
Oklahoma	-0.123	7.8%
Oregon	0.015	8.3%
Pennsylvania	-0.107	9.0%
Rhode Island	-0.042	9.9%
South Carolina	-0.042	7.3%
South Dakota	-0.230	5.8%
Tennessee	-0.192	6.2%
Texas	-0.202	6.5%
Utah	-0.074	7.8%
Vermont	-0.017	9.7%
Virginia	-0.048	8.2%
Washington	-0.236	7.4%
West Virginia	-0.025	8.6%
Wisconsin	-0.043	9.8%
Wyoming	-0.260	4.0%
All U.S.	**-0.069**	**8.6%**

Ranked from Most Progressive to Most Regressive			
State Suits Rank	**State**	**7-Point Suits Index**	**Average Effective Tax Rate**
1	California	0.046	9.5%
2	Delaware	0.028	6.0%
3	Oregon	0.015	8.3%
4	Maine	-0.005	9.6%
5	New Jersey	-0.005	9.9%
6	Montana	-0.014	6.3%
7	**Minnesota**	**-0.015**	**9.8%**
8	New York	-0.015	11.9%
9	Vermont	-0.017	9.7%
10	Idaho	-0.021	8.0%
11	West Virginia	-0.025	8.6%
12	Maryland	-0.030	10.1%
13	Rhode Island	-0.042	9.9%
14	South Carolina	-0.042	7.3%
15	Wisconsin	-0.043	9.8%
16	Virginia	-0.048	8.2%
17	North Carolina	-0.051	8.6%
18	Iowa	-0.054	9.3%
19	Nebraska	-0.055	9.3%
20	Missouri	-0.055	8.5%
21	Kentucky	-0.059	9.6%
	All U.S.	**-0.069**	**8.6%**
22	Georgia	-0.072	8.8%
23	Utah	-0.074	7.8%
24	Ohio	-0.076	9.4%
25	Michigan	-0.078	8.4%
26	Hawaii	-0.080	9.9%
27	Connecticut	-0.084	9.7%
28	Colorado	-0.084	7.3%
29	Massachusetts	-0.086	8.4%
30	Arkansas	-0.095	9.5%
31	New Mexico	-0.098	8.6%
32	Kansas	-0.101	8.3%
33	Mississippi	-0.102	8.6%
34	Indiana	-0.102	9.2%
35	Pennsylvania	-0.107	9.0%
36	Arizona	-0.120	8.0%
37	Louisiana	-0.122	7.7%
38	Oklahoma	-0.123	7.8%
39	Illinois	-0.124	9.4%
40	Alaska	-0.127	3.7%
41	New Hampshire	-0.128	6.0%
42	Alabama	-0.139	7.4%
43	North Dakota	-0.144	6.1%
44	Tennessee	-0.192	6.2%
45	Texas	-0.202	6.5%
46	Nevada	-0.222	4.8%
47	South Dakota	-0.230	5.8%
48	Washington	-0.236	7.4%
49	Florida	-0.253	5.6%
50	Wyoming	-0.260	4.0%

Figures 4-7, *4-8*, and *4-9* illustrate the variation in patterns among the states more visually. *Figure 4-7* compares Minnesota to the national average and the state with the most progressive tax system (California). *Figure 4-8* shows three states with more regressive tax structures. *Figure 4-9* compares Minnesota with its neighboring states.

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

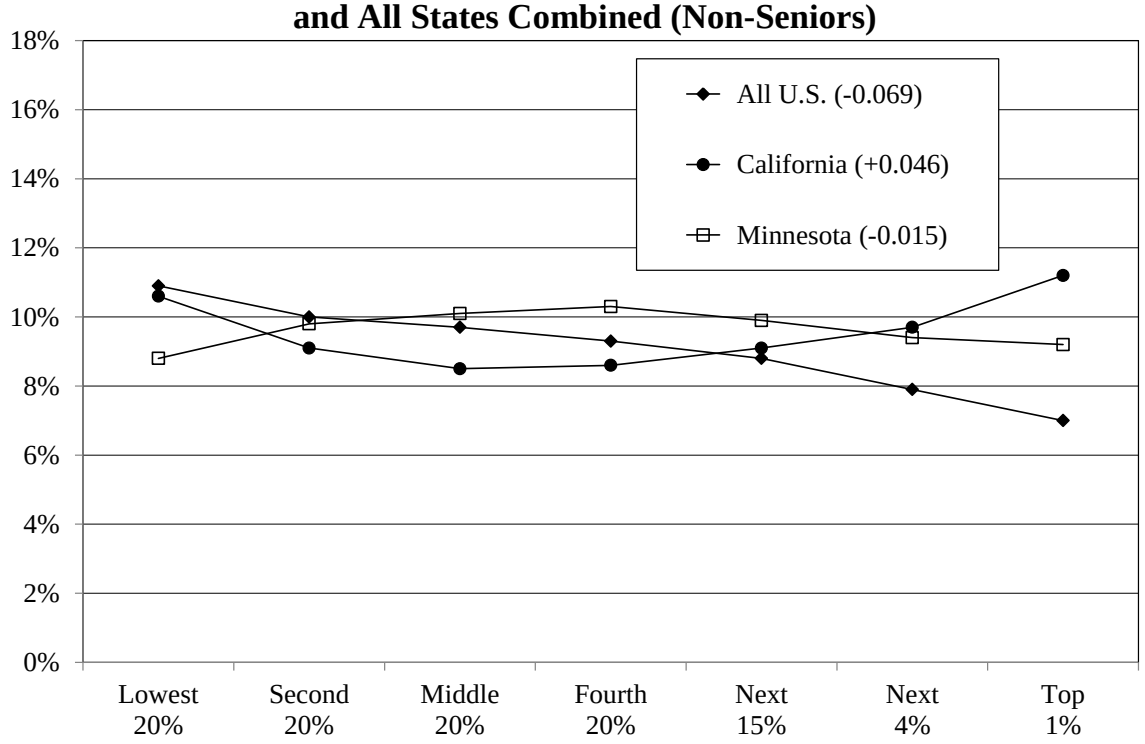


Figure 4-8
ITEP Effective Tax Rates for Minnesota and Three States With More Regressive Tax Systems (Non-Seniors)

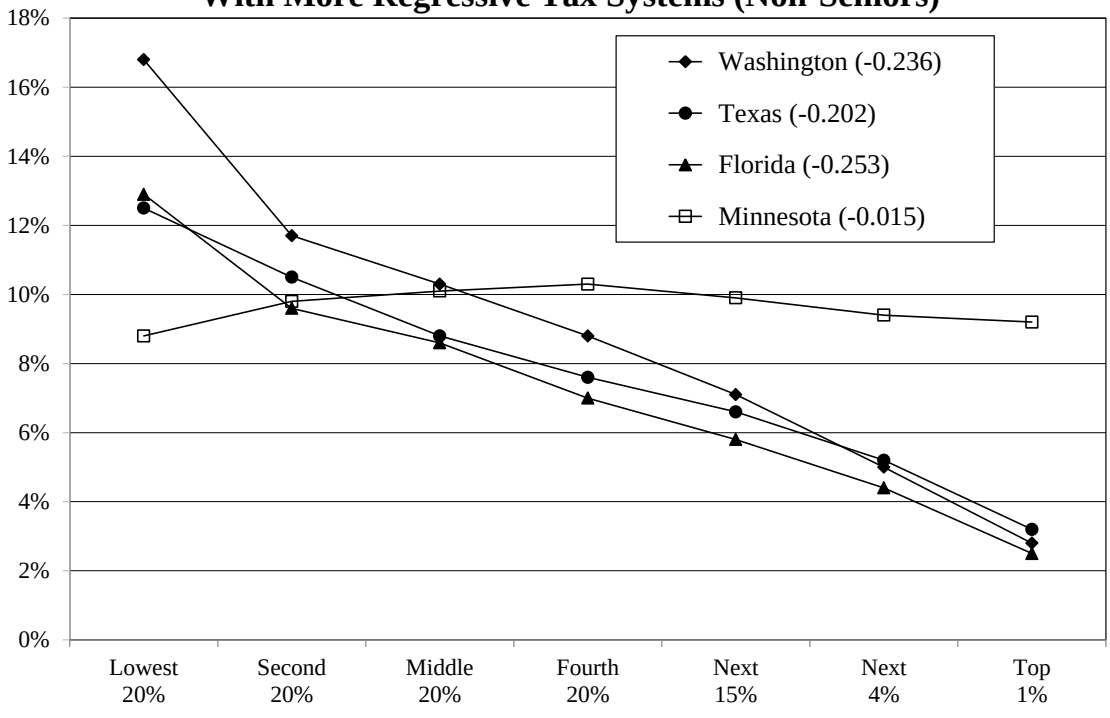
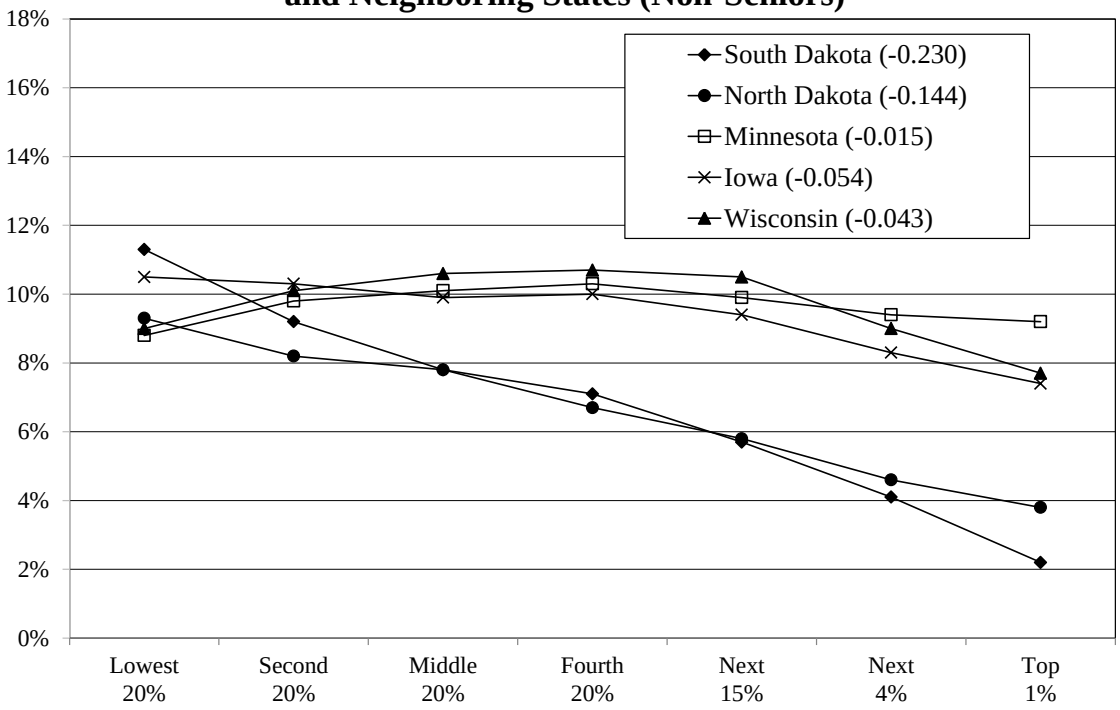


Figure 4-9
ITEP Effective Tax Rates for Minnesota and Neighboring States (Non-Seniors)



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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, more than 70 percent of the households are single-person households; only 21 percent include children. In contrast, in the top two deciles only 11 percent of all households are single-person households, and 49 percent include children.

Figure 5-1 also shows that senior households (married and single) are distributed unevenly across deciles. Seniors account for about one-fifth of all households in deciles 2 through 4 and 18 percent of all households in the top decile – but 86 percent of those top-decile seniors are married. Single seniors far outnumber senior couples in the first five deciles; in the top deciles, the number of senior couples far exceeds the number of single seniors.

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

Figure 5-1
Family Type by Population Decile

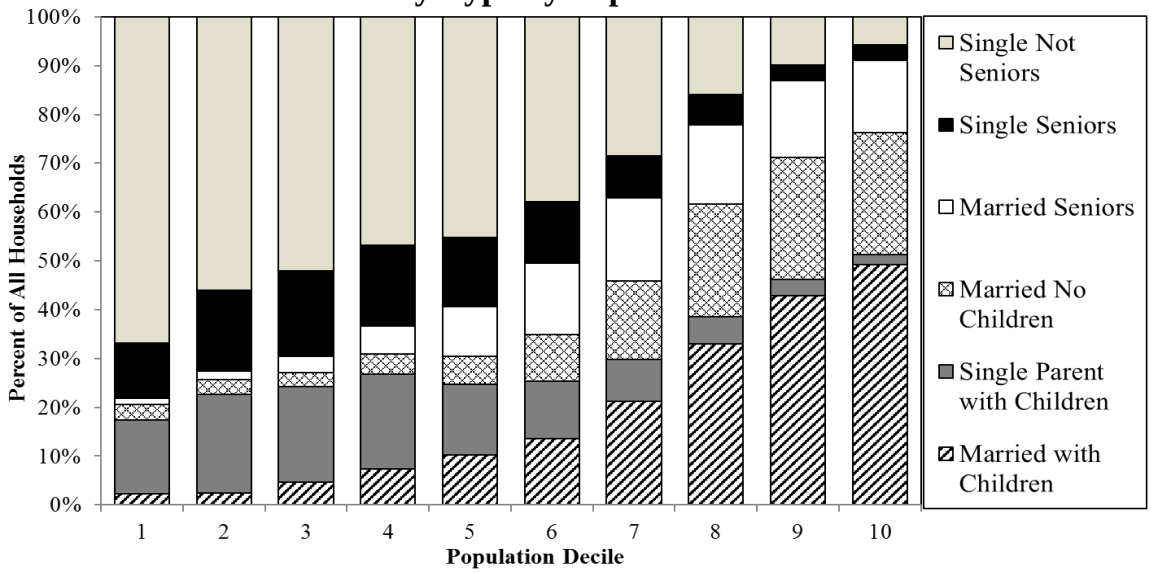
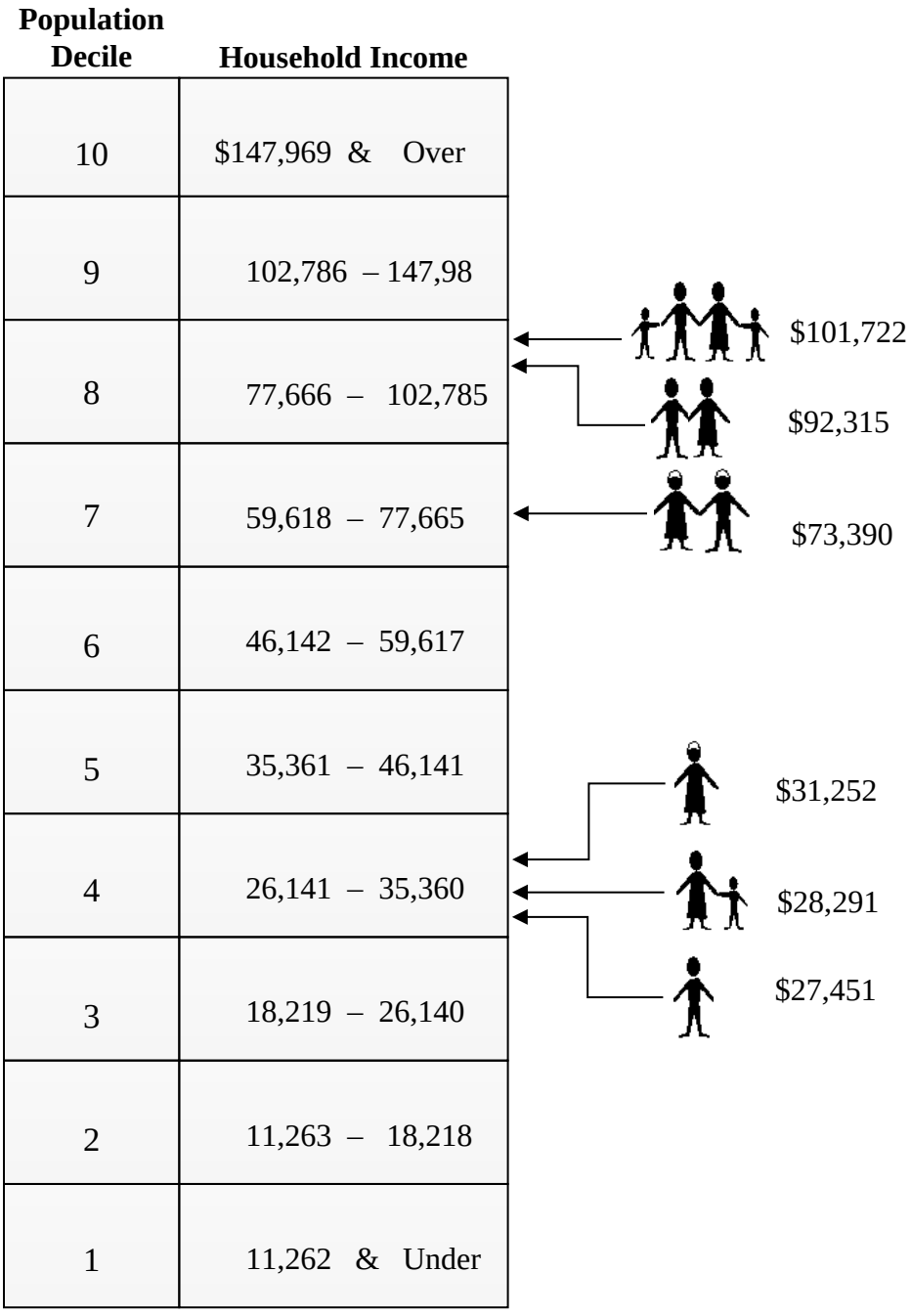


Figure 5-2 illustrates the great differences in median incomes for each of the six family types. In 2014, the median income for a single-parent family was $27,451, so the typical single-parent family was in the fourth population decile. The median income for a married couple with children was $101,722 (top of the eighth decile). The median income for senior couples ($73,390) puts them in the seventh decile. In contrast, the median single senior (at $31,252) is in the fourth decile.

Figure 5-2
Median Income by Household Type (2014)



Average Tax Burdens by Household Type

Tables 5-1 through *5-5* each show how average tax burdens and demographic characteristics vary with income for a particular type of household. *Figure 5-1* is limited to Minnesota's 497,155 married couples with children. The couples are divided into ten groups, each with 49,716 couples, ordered from lowest income to highest income.

For example, consider the third decile of married couples with children (the shaded column on *Table 5-1*). These households have incomes between $56,843 (the maximum income for the second decile) and $73,506 (the maximum income for the third decile). This is the third decile, so 20 percent of married couples with children have lower incomes; 70 percent of such families have higher incomes. For those in the third decile, average income is $65,154, and 99 percent have earned income (averaging $60,413). Almost all are homeowners (76 percent when farm homesteads are included), with homes valued an average of $147,042. Twenty-two percent are renters (paying an average of $1,023 per month), and 1 percent are neither owners nor renters (perhaps living with parents).

These married couples with children pay state and local taxes equal to 12.7 percent of their income (an average of $8,297 of tax). This includes $1,271 in residential property tax (net of PTR), $1,763 of income tax, $1,321 in state sales tax, $547 in excise taxes (motor fuels, cigarettes, and alcohol), $955 in other types of taxes levied on individuals, and $2,440 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 an average of 12.7 percent for the first three deciles to 12.4 percent in the fourth and fifth deciles and an average of 11.8 percent for the top five deciles. The Suits index for the population limited to married couples with children is -0.008, well above the all-household Suits index (-0.029).

Table 5-6 (on page 85) shows the full-sample Suits index for each of the five household types considered separately. The tax is most regressive for non-senior single-person households (at -0.060) and married couples with no children (at -0.048). It is progressive for single parents (Suits index of +0.045). The Suits index for seniors (married and single) is -0.037.

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Table 5-1

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

Each Decile Contains 49,716 Married Couples with Children

HOUSEHOLD CHARACTERISTICS	Population Decile										
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Total
Number of Households	49,716	49,716	49,716	49,716	49,716	49,716	49,716	49,716	49,716	49,716	497,155
Average Number of Children	2.3	2.3	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1
Average Household Income	$24,295	$47,185	$65,154	$80,479	$94,777	$109,752	$128,510	$152,764	$200,681	$541,415	$144,503
Maximum Household Income	$37,524	$56,843	$73,506	$87,488	$101,722	$118,106	$140,047	$168,223	$242,006		
Percent with Earned Income	84%	98%	99%	99%	100%	100%	100%	99%	100%	99%	98%
Average Earned Income	$27,635	$43,707	$60,413	$73,667	$86,351	$100,036	$112,177	$132,423	$170,358	$333,532	$115,247
Housing Status											
Homeowners	34%	53%	71%	82%	87%	92%	90%	94%	95%	96%	79%
Renters	53%	39%	22%	14%	10%	6%	6%	3%	3%	2%	16%
Farmers	3%	5%	5%	4%	4%	2%	3%	3%	3%	2%	3%
Other	10%	4%	1%	0%	0%	0%	0%	0%	0%	0%	2%
Average Market Value	$149,712	$146,878	$147,042	$157,372	$177,328	$169,289	$198,596	$226,448	$261,156	$369,361	$208,927
Average Monthly Rent	$504	$819	$1,023	$1,190	$1,220	$1,287	$1,331	$1,425	$1,510	$1,589	$870
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$914	$1,330	$1,569	$1,904	$2,322	$2,222	$2,594	$3,014	$3,567	$5,480	$2,492
-Property Tax Refund	-$504	-$449	-$298	-$236	-$243	-$126	-$36	-$4	-$7	-$5	-$191
Tax after PTR	$410	$880	$1,271	$1,668	$2,079	$2,096	$2,558	$3,010	$3,559	$5,475	$2,301
Renters Only											
Total Tax on Rental Unit	$1,241	$1,856	$2,310	$2,688	$2,755	$2,906	$3,007	$3,219	$3,247	$3,697	$2,003
Renters Share of Tax	$416	$622	$775	$902	$924	$975	$1,008	$1,080	$1,089	$1,240	$672
-Property Tax Refund	-$532	-$376	-$177	-$10	$0	$0	$0	$0	$0	$0	-$298
Tax after PTR	-$116	$246	$598	$891	$924	$975	$1,008	$1,080	$1,089	$1,240	$374
Homeowners Only											
Total Tax on Home	$1,847	$1,869	$1,824	$2,065	$2,470	$2,301	$2,701	$3,078	$3,635	$5,558	$2,879
-Property Tax Refund	-$598	-$526	-$338	-$273	-$269	-$134	-$39	-$4	-$7	-$5	-$174
Homeowners Tax after PTR	$1,249	$1,343	$1,486	$1,792	$2,201	$2,167	$2,662	$3,074	$3,628	$5,553	$2,705
State Income Tax	-$1,147	$464	$1,763	$2,715	$3,546	$4,579	$5,669	$7,135	$10,352	$39,679	$7,475
State Sales Tax	$877	$1,142	$1,321	$1,457	$1,571	$1,690	$1,831	$2,004	$2,319	$4,025	$1,824
State Excise Taxes	$524	$535	$547	$554	$562	$567	$584	$615	$678	$1,117	$628
Other Taxes	$596	$777	$955	$1,053	$1,193	$1,288	$1,364	$1,479	$1,613	$3,283	$1,360
Business Taxes[1]	$1,935	$1,951	$2,440	$2,572	$2,816	$2,786	$3,115	$3,662	$5,447	$10,258	$3,698
Total State and Local Tax Burden	$3,196	$5,750	$8,297	$10,018	$11,767	$13,005	$15,121	$17,905	$23,968	$63,837	$17,287
Effective Tax Rate for all Taxes	13.2%	12.2%	12.7%	12.4%	12.4%	11.8%	11.8%	11.7%	11.9%	11.8%	12.0%

[1]For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

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Table 5-2

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

Each Decile Contains 31,282 Non-Senior Married Couples without Children

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	31,282	31,282	31,282	31,282	31,282	31,282	31,282	31,282	31,282	31,282	312,823
Average Household Income	$17,475	$43,766	$60,642	$74,075	$86,465	$99,458	$116,271	$137,789	$177,548	$503,072	$131,655
Maximum Household Income	$32,921	$53,944	$67,340	$80,121	$92,315	$106,663	$125,907	$151,268	$220,112		
Percent with Earned Income	56%	90%	97%	98%	98%	99%	98%	99%	99%	97%	93%
Average Earned Income	$20,816	$37,889	$51,429	$62,058	$73,299	$83,532	$95,308	$109,151	$139,533	$272,338	$98,209
Housing Status											
Homeowners	38%	60%	71%	77%	80%	80%	90%	90%	93%	92%	77%
Renters	30%	28%	20%	18%	16%	15%	7%	5%	1%	2%	14%
Farmers	10%	8%	6%	4%	4%	5%	3%	5%	6%	6%	6%
Other	22%	4%	2%	1%	0%	0%	0%	0%	0%	0%	3%
Average Market Value	$194,958	$168,056	$161,149	$158,765	$164,634	$179,504	$204,040	$206,046	$215,413	$329,122	$201,961
Average Monthly Rent	$422	$831	$1,045	$1,129	$1,207	$1,258	$1,330	$1,331	$1,532	$1,533	$956
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$945	$1,306	$1,604	$1,799	$1,855	$2,093	$2,140	$2,543	$2,777	$4,433	$2,149
-Property Tax Refund	-$332	-$306	-$258	-$210	-$140	-$119	-$38	-$16	-$11	-$18	-$145
Tax after PTR	$612	$1,000	$1,345	$1,589	$1,715	$1,973	$2,102	$2,527	$2,766	$4,415	$2,005
Renters Only											
Total Tax on Rental Unit	$1,046	$1,885	$2,360	$2,550	$2,724	$2,841	$1,852	$3,003	$1,890	$3,462	$2,180
Renters Share of Tax	$351	$632	$792	$855	$914	$953	$621	$1,007	$634	$1,161	$731
-Property Tax Refund	-$297	-$221	-$37	-$1	$0	$0	$0	$0	$0	$0	-$113
Tax after PTR	$54	$411	$755	$854	$914	$953	$621	$1,007	$634	$1,161	$619
Homeowners Only											
Total Tax on Home	$1,752	$1,656	$1,855	$2,018	$2,033	$2,296	$2,223	$2,617	$2,795	$4,502	$2,466
-Property Tax Refund	-$509	-$359	-$323	-$257	-$167	-$141	-$41	-$17	-$11	-$18	-$156
Homeowners Tax after PTR	$1,243	$1,298	$1,531	$1,761	$1,867	$2,155	$2,182	$2,600	$2,784	$4,484	$2,310
State Income Tax	$95	$973	$1,954	$2,774	$3,617	$4,437	$5,447	$6,763	$9,074	$33,894	$6,903
State Sales Tax	$814	$1,059	$1,198	$1,293	$1,373	$1,449	$1,555	$1,703	$1,959	$3,559	$1,596
State Excise Taxes	$519	$515	$520	$523	$527	$531	$540	$554	$578	$720	$553
Other Taxes	$630	$863	$977	$1,050	$1,128	$1,205	$1,337	$1,367	$1,495	$2,986	$1,304
Business Taxes[1]	$2,022	$2,411	$2,089	$2,172	$2,382	$2,593	$2,969	$3,580	$3,982	$10,665	$3,486
Total State and Local Tax Burden	$4,693	$6,821	$8,083	$9,402	$10,742	$12,189	$13,951	$16,494	$19,854	$56,239	$15,847
Effective Tax Rate for all Taxes	26.9%	15.6%	13.3%	12.7%	12.4%	12.3%	12.0%	12.0%	11.2%	11.2%	12.0%

[1]For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

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Table 5-3

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

Each Decile Contains 97,087 Non-Senior Single-Person Households

HOUSEHOLD CHARACTERISTICS	Population Decile										
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Total
Number of Households	97,087	97,087	97,087	97,087	97,087	97,087	97,087	97,087	97,087	97,087	970,868
Average Household Income	$4,020	$9,843	$14,238	$18,945	$24,349	$31,028	$38,764	$48,425	$63,009	$139,845	$39,247
Maximum Household Income	$7,541	$11,994	$16,481	$21,567	$27,451	$34,845	$43,116	$54,666	$73,714		
Percent with Earned Income	61%	53%	64%	73%	87%	93%	95%	96%	95%	95%	81%
Average Earned Income	$4,747	$9,062	$13,058	$17,371	$22,094	$28,944	$35,864	$44,352	$56,243	$98,718	$36,794
Housing Status											
Homeowners	10%	10%	11%	14%	17%	25%	33%	44%	62%	77%	30%
Renters	36%	50%	52%	57%	61%	58%	57%	48%	33%	22%	48%
Farmers	2%	1%	1%	0%	1%	1%	1%	1%	2%	1%	1%
Other	52%	39%	35%	29%	21%	16%	9%	6%	4%	0%	21%
Average Market Value	$171,883	$119,766	$150,067	$109,703	$118,615	$105,433	$116,525	$116,775	$142,510	$174,729	$138,811
Average Monthly Rent	$99	$218	$320	$416	$528	$672	$787	$902	$1,053	$1,266	$583
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$278	$254	$317	$408	$522	$650	$855	$1,093	$1,477	$2,262	$812
-Property Tax Refund	-$132	-$162	-$186	-$193	-$195	-$175	-$179	-$176	-$175	-$111	-$168
Tax after PTR	$147	$92	$131	$215	$327	$476	$676	$917	$1,302	$2,151	$643
Renters Only											
Total Tax on Rental Unit	$346	$581	$823	$989	$1,215	$1,530	$1,779	$2,040	$2,379	$945	$1,358
Renters Share of Tax	$116	$195	$276	$332	$407	$513	$597	$684	$798	$317	$455
-Property Tax Refund	-$156	-$249	-$279	-$222	-$207	-$164	-$139	-$99	-$36	$0	-$172
Tax after PTR	-$40	-$54	-$2	$110	$201	$349	$458	$585	$762	$317	$283
Homeowners Only											
Total Tax on Home	$2,005	$1,487	$1,360	$1,538	$1,525	$1,358	$1,504	$1,674	$1,915	$2,620	$1,894
-Property Tax Refund	-$639	-$351	-$327	-$474	-$380	-$307	-$295	-$284	-$258	-$137	-$276
Homeowners Tax after PTR	$1,365	$1,136	$1,033	$1,065	$1,145	$1,051	$1,208	$1,390	$1,657	$2,483	$1,618
State Income Tax	-$26	-$7	$111	$314	$608	$989	$1,488	$2,096	$3,001	$8,274	$1,685
State Sales Tax	$356	$453	$508	$555	$600	$648	$696	$748	$856	$1,414	$684
State Excise Taxes	$343	$358	$365	$372	$379	$386	$392	$400	$404	$417	$382
Other Taxes	$169	$184	$230	$271	$306	$358	$424	$475	$557	$892	$387
Business Taxes[1]	$711	$689	$808	$861	$980	$1,011	$1,137	$1,243	$1,526	$3,332	$1,230
Total State and Local Tax Burden	$1,700	$1,769	$2,154	$2,588	$3,200	$3,868	$4,814	$5,880	$7,647	$16,479	$5,010
Effective Tax Rate for all Taxes	42.3%	18.0%	15.1%	13.7%	13.1%	12.5%	12.4%	12.1%	12.1%	11.8%	12.8%

[1]For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

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Table 5-4

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

Each Decile Contains 56,026 Senior Households

HOUSEHOLD CHARACTERISTICS	Population Decile										
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Total
Number of Households	56,026	56,026	56,026	56,026	56,026	56,026	56,026	56,026	56,026	56,026	560,261
Percent that are Married	9%	12%	21%	34%	45%	57%	66%	73%	79%	83%	48%
Average Household Income	$10,103	$18,526	$26,545	$35,228	$44,403	$54,289	$67,038	$84,253	$112,464	$340,674	$79,352
Maximum Household Income	$14,706	$22,349	$31,028	$39,789	$49,086	$59,979	$74,825	$95,780	$135,109		
Percent with Earned Income	6%	9%	17%	22%	30%	34%	43%	48%	53%	64%	33%
Average Earned Income	$15,710	$8,125	$7,602	$14,236	$16,294	$17,564	$24,238	$27,770	$45,597	$113,167	$42,008
Housing Status											
Homeowners	28%	42%	59%	65%	75%	79%	80%	88%	88%	87%	69%
Renters	43%	42%	29%	24%	17%	16%	10%	6%	5%	6%	20%
Farmers	5%	4%	5%	7%	6%	5%	7%	6%	6%	8%	6%
Other	24%	12%	7%	4%	2%	0%	2%	0%	0%	0%	5%
Average Market Value	$142,087	$133,526	$150,727	$153,924	$154,210	$172,840	$195,175	$202,221	$244,587	$330,684	$198,607
Average Monthly Rent	$227	$400	$581	$765	$860	$1,019	$1,061	$1,200	$1,281	$1,440	$634
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$530	$807	$1,190	$1,312	$1,611	$1,872	$2,003	$2,249	$2,717	$4,147	$1,844
-Property Tax Refund	-$263	-$458	-$524	-$421	-$445	-$438	-$333	-$258	-$121	-$22	-$328
Tax after PTR	$266	$348	$666	$892	$1,166	$1,433	$1,670	$1,991	$2,596	$4,125	$1,515
Renters Only											
Total Tax on Rental Unit	$614	$1,089	$1,531	$1,870	$2,022	$2,341	$2,396	$2,693	$2,865	$3,184	$1,553
Renters Share of Tax	$206	$365	$514	$627	$678	$785	$804	$903	$961	$1,068	$521
-Property Tax Refund	-$333	-$538	-$584	-$464	-$383	-$320	-$38	$0	$0	$0	-$390
Tax after PTR	-$127	-$173	-$71	$163	$295	$465	$766	$903	$961	$1,068	$131
Homeowners Only											
Total Tax on Home	$1,339	$1,412	$1,600	$1,595	$1,838	$2,060	$2,177	$2,337	$2,826	$4,326	$2,311
-Property Tax Refund	-$367	-$505	-$554	-$428	-$470	-$463	-$375	-$274	-$127	-$22	-$335
Homeowners Tax after PTR	$972	$907	$1,046	$1,166	$1,368	$1,597	$1,802	$2,062	$2,699	$4,304	$1,977
State Income Tax	$4	-$12	$45	$276	$560	$1,034	$1,845	$3,050	$4,800	$19,725	$3,133
State Sales Tax	$450	$572	$687	$806	$917	$1,025	$1,143	$1,304	$1,542	$2,568	$1,101
State Excise Taxes	$174	$205	$233	$258	$275	$292	$309	$325	$343	$395	$281
Other Taxes	$299	$369	$478	$585	$653	$753	$839	$942	$1,074	$1,930	$792
Business Taxes[1]	$927	$869	$1,083	$1,347	$1,592	$1,702	$2,078	$2,824	$3,521	$8,819	$2,476
Total State and Local Tax Burden	$2,120	$2,351	$3,192	$4,162	$5,162	$6,240	$7,884	$10,436	$13,876	$37,562	$9,299
Effective Tax Rate for all Taxes	21.0%	12.7%	12.0%	11.8%	11.6%	11.5%	11.8%	12.4%	12.3%	11.0%	11.7%

[1]For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

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Table 5-5

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

Each Decile Contains 31,981 Single-Parent Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	31,981	31,981	31,981	31,981	31,981	31,981	31,981	31,981	31,981	31,981	319,807
Average Number of Children	1.6	1.6	1.7	1.8	1.7	1.8	1.8	1.7	1.5	1.4	1.6
Average Household Income	$6,031	$12,263	$16,587	$20,689	$25,670	$30,926	$37,628	$47,044	$62,216	$135,144	$39,420
Maximum Household Income	$9,708	$14,777	$18,468	$23,032	$28,291	$33,893	$41,462	$52,978	$73,804		
Percent with Earned Income	64%	81%	90%	90%	92%	95%	95%	97%	99%	96%	90%
Average Earned income	$6,326	$11,356	$15,374	$19,172	$23,988	$28,417	$34,429	$43,033	$55,050	$97,562	$35,174
Housing Status											
Homeowners	12%	14%	15%	18%	20%	26%	37%	49%	64%	80%	33%
Renters	69%	68%	62%	68%	66%	62%	55%	45%	30%	19%	55%
Farmers	0%	0%	1%	1%	0%	1%	0%	1%	2%	1%	1%
Other	19%	17%	22%	14%	14%	11%	8%	5%	4%	0%	11%
Average Market Value	$97,620	$81,963	$112,806	$99,159	$117,764	$106,895	$117,221	$123,444	$140,087	$199,467	$137,911
Average Monthly Rent	$131	$251	$348	$418	$543	$618	$769	$869	$1,031	$1,238	$526
AVERAGE TAX BURDENS											
Local Property Tax											
All Households											
Total Tax	$265	$344	$430	$507	$633	$706	$1,005	$1,233	$1,663	$2,605	$939
-Property Tax Refund	-$191	-$283	-$354	-$399	-$386	-$405	-$357	-$346	-$283	-$143	-$315
Tax after PTR	$74	$61	$76	$108	$247	$301	$648	$887	$1,381	$2,462	$624
Renters Only											
Total Tax on Rental Unit	$413	$696	$910	$1,040	$1,291	$1,417	$1,760	$1,979	$2,330	$1,679	$1,259
Renters Share of Tax	$138	$233	$305	$349	$433	$475	$590	$664	$781	$563	$422
-Property Tax Refund	-$195	-$326	-$421	-$462	-$431	-$472	-$347	-$265	-$141	-$7	-$342
Tax after PTR	-$57	-$92	-$116	-$113	$2	$3	$243	$398	$640	$556	$80
Homeowners Only											
Total Tax on Home	$1,385	$1,286	$1,530	$1,424	$1,747	$1,481	$1,802	$1,844	$2,147	$2,998	$2,061
-Property Tax Refund	-$460	-$424	-$592	-$461	-$509	-$416	-$451	-$452	-$362	-$175	-$375
Homeowners Tax after PTR	$925	$862	$938	$963	$1,238	$1,065	$1,351	$1,393	$1,785	$2,824	$1,685
State Income Tax	-$391	-$847	-$1,174	-$1,267	-$814	-$524	$396	$1,290	$2,219	$7,115	$600
State Sales Tax	$533	$634	$688	$730	$774	$815	$861	$916	$1,036	$1,652	$864
State Excise Taxes	$385	$398	$403	$407	$412	$417	$423	$432	$464	$573	$431
Other Taxes	$237	$283	$331	$351	$429	$459	$569	$669	$807	$1,245	$538
Business Taxes[1]	$748	$899	$1,003	$1,084	$1,064	$1,134	$1,249	$1,361	$1,610	$3,213	$1,337
Total State and Local Tax Burden	$1,586	$1,427	$1,327	$1,412	$2,112	$2,602	$4,145	$5,554	$7,516	$16,260	$4,394
Effective Tax Rate for all Taxes	26.3%	11.6%	8.0%	6.8%	8.2%	8.4%	11.0%	11.8%	12.1%	12.0%	11.1%

[1]For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

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

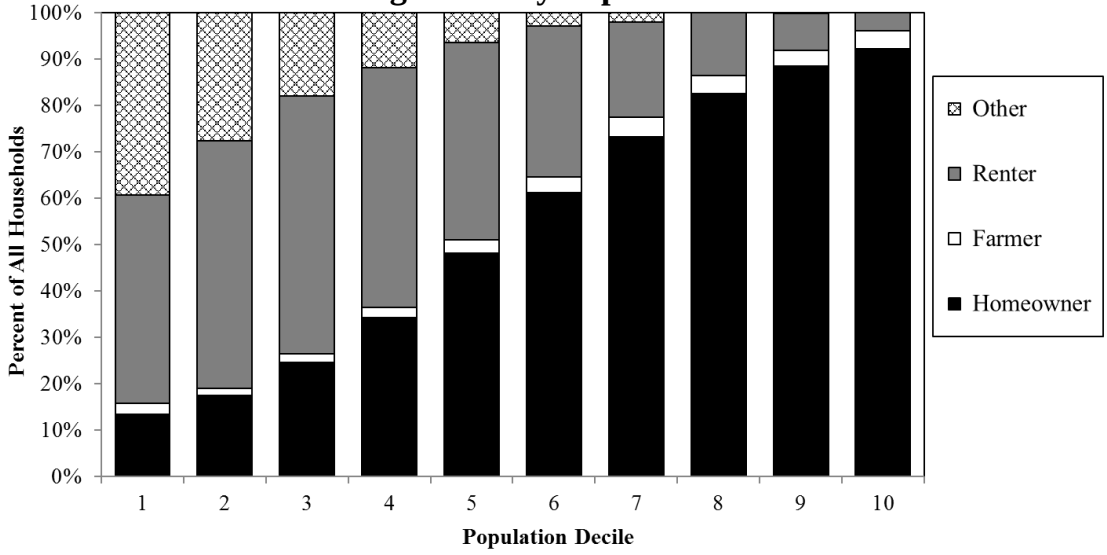
Household Type	Full Sample Suits Index	Average Effective Tax Rate
Married With Children	-0.008	12.0%
Married No Children (Non-Senior)	-0.048	12.0%
Single-Person Household (Non-Senior)	-0.060	12.8%
Seniors (Single or Married)	-0.037	11.7%
Single Parents	+0.045	11.1%
All Family Types	-0.029	12.0%

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 15 percent in the first decile to 96 percent in the tenth decile. For all households, 57 percent were homeowners. Renter households outnumbered homeowners in each of the first four deciles; the top three deciles contained 11 homeowner households for every renter household. There were twice as many farmers in the top three deciles as in the bottom three deciles.[28]

Figure 5-3 also shows that a significant proportion of the households in the first five deciles were classified as neither homeowners nor renters. This "other" category is the result of this study's definition of a household. While the Census defines a household to include all individuals living in a particular housing unit, this study (like other tax incidence studies) defines a household as a taxpayer, a taxpayer's spouse, and all others claimed as dependents for income tax purposes.

Figure 5-3
Housing Status by Population Decile



[28] In this study, farm households are defined as those living on farm homestead property, so every farmer owns a home. This definition excludes active farmers who farm only rented land or do not live on a farm homestead. The home ownership rates cited in this chapter include both farm and non-farm homesteads.

In this study, a secondary household living with a primary household is assumed to pay no property tax. For example, an older child living with parents (but not claimed as dependent) would generally be classified as neither renter nor homeowner. Other examples would include elderly parents living with their children or an unrelated single person living with a homeowner. In such cases, the entire property tax burden was assigned to the homeowner; the second household is assumed to pay no property tax.[29] 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 2,660,914 Minnesota households in 2014, with a median income of $46,141. In contrast, the U.S. Census reports a total of 2,129,195 Minnesota households in 2014, with a median income of $61,481. Census households average 2.50 persons, while the incidence study households average 2.00 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.

[29] 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 25 percent more households than the Census, and the median household income in the incidence study is only 75 percent of that reported by the Census.

In summary, the incidence study's population is consistent with the Census.[30] The U.S. Census estimate of Minnesota's 2014 population exceeds the Incidence Study population by less than one percent. This difference is primarily due to this study's exclusion of part-year residents. The lower median income reported in this study occurs largely because the same total income is spread over a larger number of households. The incidence definition of a household is more appropriate than the Census definition when describing the distribution of the tax burden.

[30] 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 almost 20 percent. This reflects both the study's broader definition of income and income underreporting in the Census.

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Appendix A
The Incidence Study Database

The 2014 incidence study database includes detailed information on income and taxes for a stratified random sample of 147,306 Minnesota households. This sample is then "blown up" to represent 2.66 million Minnesota households. Individual income tax returns and property tax refund returns filed with the Department of Revenue were the primary sources of information and were supplemented with data on nontaxable income obtained from various sources. The additional nontaxable income information provides a more accurate measure of total income, particularly for low-income households who did not meet tax filing requirements.

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

The incidence study database was constructed from a number of different sources. First, data was taken from state and federal income tax returns filed in Minnesota. Then, data was added from property tax refund returns. More information concerning homestead property taxes was obtained from data provided by Minnesota counties to the Department of Revenue. Additional income and data came from several state agencies. Information obtained from the American Community Survey of the United States Bureau of the Census was used to estimate annual rent expenditures for renter households. Finally, estimates of household spending patterns were derived using several years of Consumer Expenditure Survey data from the United States Department of Labor.

Measurement of Household Income

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

Definition of Income

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

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

Components of Household Income in 2014

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

- Income tax filers (88.6 percent of all households and 97.6 percent of all income)
- Property Tax Refund filers who file no income tax return (3.3 percent of all filers and 0.8 percent of all income)
- Nonfilers (8.1 percent of all households and 1.6 percent of all income)

Federal Gross Income (FGI) reported on federal income tax returns accounts for 86.9 percent of total income. Nontaxable interest and retirement income reported on income tax returns adds another 8.9 percent.

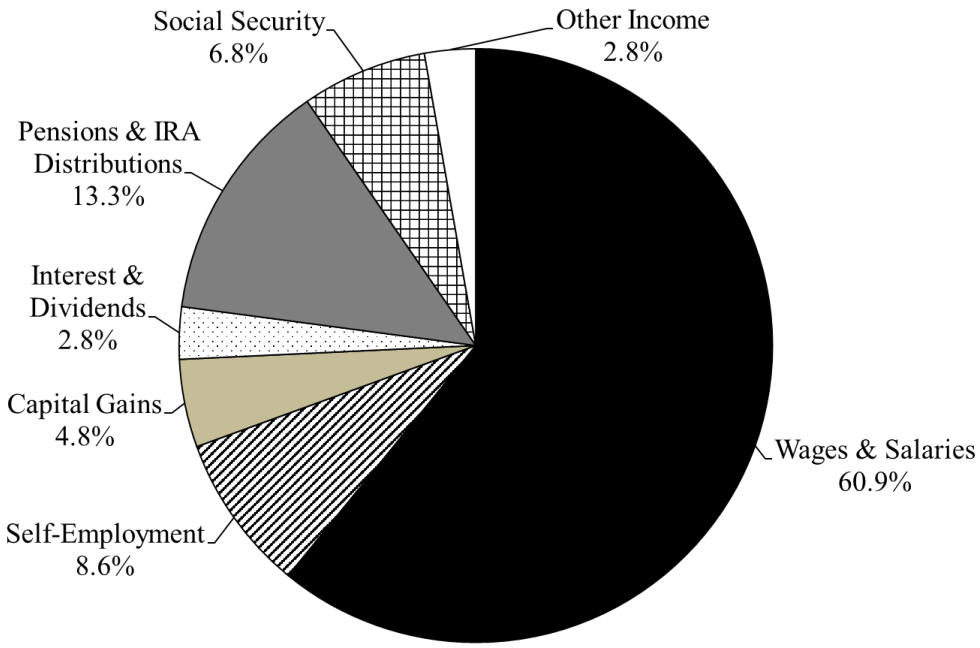
Table A-1
Components of Total Household Income in 2014 ($ Millions)

Group	Source of Income	Amount
File income tax 2,358,700 households	Wages	$ 124,972
	Taxable interest & dividends	4,976
	Business income (Schedules C, E, and F)	18,827
	Capital gains & other gains	9,895
	Taxable IRA distributions	4,727
	Taxable pension & annuity income	10,703
	Taxable unemployment benefits	666
	Taxable social security benefits	5,186
	Other taxable income	(385)
	Federal Gross Income (FGI)	**$ 179,567**
	Adjustments to FGI	
	Taxable refunds of state income taxes	(502)
	Half of Self-employment tax	(482)
	Self-employed health insurance deduction	(625)
	Penalty on early withdrawal of savings	(1)
	Alimony paid	(178)
	Nontaxable interest	824
	Nontaxable IRA distributions	1,089
	Nontaxable pension & annuity income	10,447
	Nontaxable social security income	6,009
	Other nontaxable income	4,925
	Public assistance cash payments	279
	Workers' compensation	193
	Total Household Income	**$ 201,545**
File Property Tax Refund (but not income tax) 86,500 households	Wages	$ 195
	Interest & dividends	15
	Unemployment benefits	3
	Pension income	164
	Social security income	1,014
	Public assistance cash payments	191
	Workers' compensation	9
	Other income	127
	Total Household Income	**$ 1,718**
Nonfilers 215,700 households	Wages	$ 657
	Interest & dividends	49
	Unemployment benefits	26
	Pension income	313
	Social security income	1,932
	Public assistance cash payments	151
	Workers' compensation	50
	Other income	186
	Total Household Income	**$ 3,364**
Total Population 2,660,900 households	**Total Household Income**[1]	**$ 206,627**

[1]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 60.9 percent of all income, and income from sole proprietors, farmers, pass-through entities, and rents accounts for another 8.6 percent. Capital income in the form of interest, dividends, and capital gains combines for 7.6 percent. Retirement income totals 20.1 percent.

Figure A-1
Shares of Total Income (2014)



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.

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Appendix B
The Incidence Analysis

Introduction

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

1. Incidence of Taxes on Households

   - The personal income tax is paid by individual taxpayers, and the incidence is the same as the initial impact of the tax.
   - Taxes on purchases by consumers (sales, solid waste management) are borne by consumers of the taxed items.
   - The property tax on homeowners is borne by the homeowner.
   - The motor vehicle registration tax on vehicles owned by households is borne by the owner of the vehicle.
   - Mortgage registration and deed transfer taxes on homes are borne by homeowners.
   - Excise taxes – those on motor fuels (bought by consumers), tobacco, and alcohol – are assumed fully shifted to consumers, as are the taxes on consumer purchases of insurance, MinnesotaCare taxes, and taxes on gambling. For purposes of this study, these are considered taxes on households even though they are paid by businesses. The term "business taxes" in this study does not include these taxes.

2. Incidence of Taxes on Business

   Most taxes on business property, business purchases, and corporate income are partially shifted to consumers and workers. The amount of tax shifting varies by tax and by business sector, depending on the scope of the product market (local or national) and the magnitude of Minnesota's tax rates compared to those in other states. To shift a tax, the individual or business legally liable to pay the tax must alter its economic behavior because of the tax. For example, a property tax paid by a business firm may lead the firm to raise its prices, lower its pay to employees, or the business owner may experience reduced profits.

The rationale for this study's incidence assumptions is discussed in the next two sections. First, taxes on households are discussed. The incidence of business taxes, which is discussed next, is much more complex. Many issues are unsettled, and a wide variety of approaches have been used in incidence studies other than Minnesota's approach. As a result, this section provides an extended discussion of the methodology underlying this study's approach to business tax incidence.

Taxes on Households

Taxes on Income or Wealth

Individual Income Tax. This study assumes that the burden of the individual income tax is not amenable to shifting through changes in either wages or interest rates. This assumption is correct if total hours worked and savings rates are unresponsive to after-tax returns and the package of public spending and taxes in Minnesota (compared to other states) does not cause significant migration. Given this assumption, the state income tax burden equals each household's tax liability, as listed in the study's database.

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

In order to eliminate the chance that decedent incomes were understated due to lack of a full year's income in the year of death, estate tax returns were matched against income tax returns for the last two full years prior to death. All returns filed between 2002 and 2012 were included in estimating how the tax varied with income.

Taxes on Consumer Purchases

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

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

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

Gambling Taxes. Gross receipts taxes on pulltabs, tipboards, bingo, raffles, and horse racing were assumed to be borne by the bettor. A 1994 survey by the Minnesota Lottery[31] provided substantial information about how gambling varies by income level. That information was supplemented by data from a Wisconsin Lottery Tracking Study and from the Consumer Expenditure Survey.

The pattern of expenditures on pulltabs (the primary source of revenue) was similar to that for the lottery, so the more detailed distributional information about lottery expenditures was used to distribute these gambling taxes.

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

Property Taxes on Non-Business Property

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

Motor Vehicle Registration Tax. The registration tax on motor vehicles owned by households was assumed to be fully borne by the owner. In this study, the actual tax paid by sample households was found by matching sample households to the motor vehicle registration files.

[31] 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 2012, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 2012); 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 $10.2 billion in business taxes in 2014, as summarized in *Table 2-1*. These business taxes (including rental property taxes) account for a significant percent of Minnesota's state and local tax revenue. Business taxes include both taxes on capital (structures, capital equipment, and land) and taxes on business purchases of short-lived intermediate inputs (such as gasoline and restaurant meals).

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

Conceptual Structure

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

1. *Capital moves to where it earns the highest return.* If a tax on capital in a single state (or industry) reduces the after-tax rate of return, investors will move their capital to lower-tax locations (or industries). As production falls, prices will rise or costs (including wages) will fall until the after-tax rate of return is again equal to the after-tax rate of return elsewhere. Only the average tax on all forms of capital in all states — a tax which owners of capital cannot avoid — will be fully borne by capital so long as capital is free to move in search of the highest rate of return.

2. *Minnesota's taxes do not occur in isolation.* Every state levies business taxes. The incidence of a tax levied at the same rate in all states differs greatly from the incidence of a tax levied only in Minnesota. For example, a one percent tax levied on business capital in only Minnesota will be largely shifted to consumers and workers; capital is unlikely to bear much of the final burden due to the ease of capital movement. In contrast, if all states impose the identical one percent tax on the value of all business capital, investors cannot escape the tax. Such a "national" tax on capital is much more likely to be borne by capital, reducing the after-tax rate of return on capital throughout the nation.

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

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

4. *Some businesses, depending on their market, can shift Minnesota business taxes forward to consumers in higher prices.* Given time for full adjustment, the ability to shift taxes forward to consumers depends on the nature of the product being sold. Some producers, such as restaurants, compete only with other Minnesota companies; tax increases would affect all restaurants equally, and prices would rise to cover this higher cost. In contrast, a higher Minnesota tax on manufacturers is much harder to shift to consumers because firms compete in a national market. Therefore, Minnesota manufacturers cannot raise prices to cover higher state taxes. In this study, producers of "local market products" are assumed to pass tax differentials on to consumers but producers of "national market products" cannot.

5. *A tax that reduces the competitiveness of Minnesota businesses will be borne by immobile resources — those either unable or unwilling to leave the state.* If capital is mobile and prices cannot be increased (due to competition), the burden of business taxes will reduce payments to inputs that are geographically tied to the state, including labor and land.

6. *An increase in taxes reflects an increase in state and local government spending.* This study assumes that workers do not move between Minnesota and other states in response to changes in state taxes, because tax changes are offset by expenditure changes, leaving the net benefits to Minnesota taxpayers unchanged. In other words, labor (along with land) is assumed to be immobile. In contrast, changes in taxes on business income are assumed not to be offset by changes in benefits from government expenditures.

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

Allocation of Business Taxes

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

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

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

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

Allocation of Business Taxes: An Example

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

Allocating the Burden Among Capital, Consumers, and Labor

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

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

This 3-part division of the tax is based on the answers to three questions. The approach is summarized in *Figure B-1*, using the example of a $120 million property tax on capital in the manufacturing sector.

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

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

For each particular tax on capital, this study estimates the average national tax rate on all capital. If the Minnesota tax rate on a particular form of capital is twice the national average (as is assumed hypothetically in *Figure B-1*), then the burden of the first half of the tax is assumed to fall on capital. What happens to the remaining half ($60 million) depends on the answers to the next two questions.

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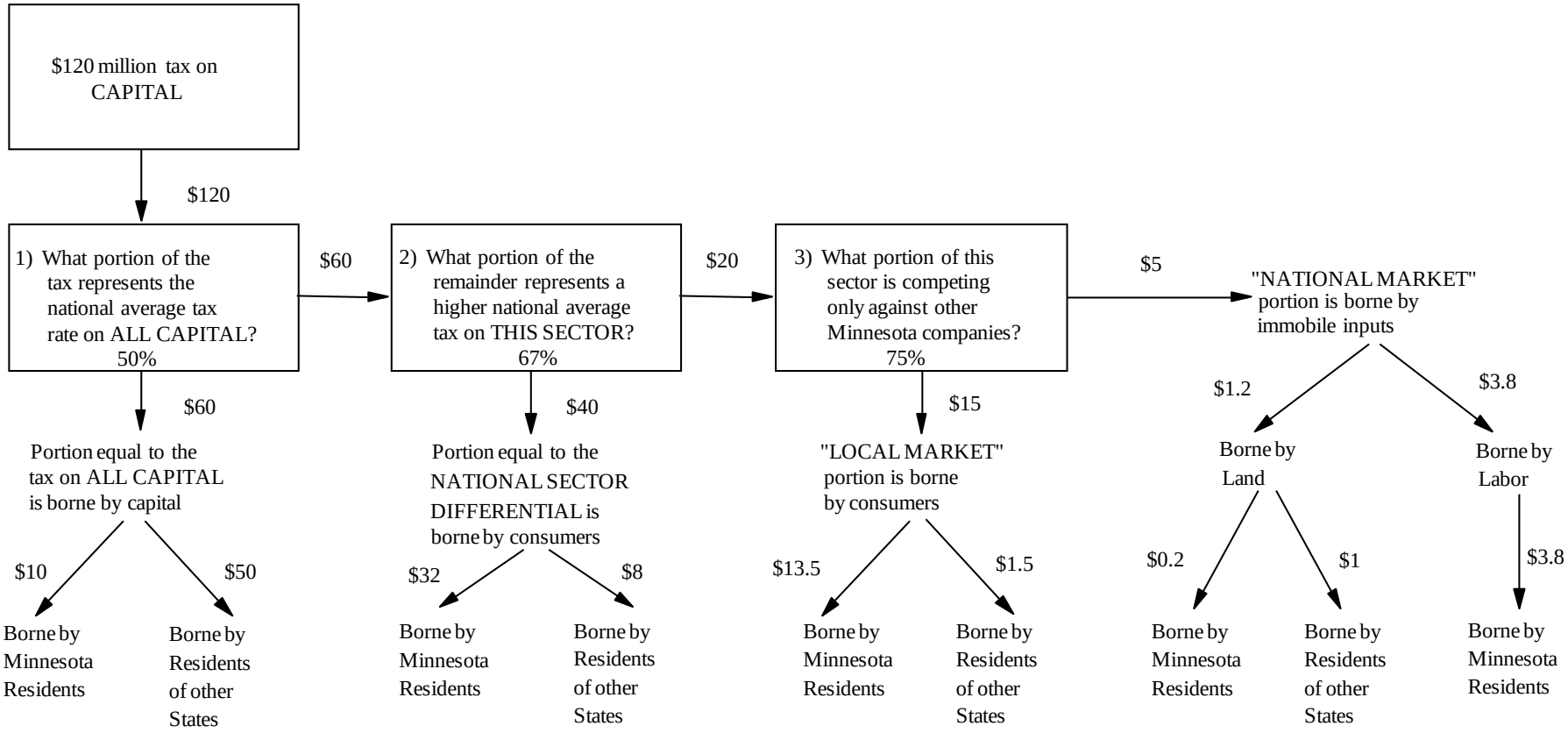
Figure B-1

Incidence of a Hypothetical $120 Million Tax on Capital



Summary of Tax Incidence
($ Millions)

Taxpayer Category	Total	Minnesota Residents	Residents of Other States
Capital*	$61.2	$10.2	$51.0
Consumers	55.0	45.5	9.5
Labor	3.8	3.8	0.0
Total	$120.0	$59.5	$60.5

*Capital includes land.

Question 2. What portion of the remaining $60 million in taxes on capital equipment represents a higher national average tax on this particular sector? Because capital taxes are levied at different rates on different forms of capital, some forms of capital are taxed in all states at a higher rate than all capital. For example, commercial property is taxed at a considerably higher rate than manufacturing property, and both are taxed more heavily than agriculture. In this example, suppose the national tax rate in the manufacturing sector is 1.67 times as high as the national average tax on all capital. This 67 percent higher-than-average tax rate difference for the manufacturing sector is referred to as its "national sector differential."

Despite these heavier taxes, however, the after-tax rate of return in manufacturing cannot remain lower (with mobile capital) than the rate of return available in other sectors. As firms adjust by reducing output, the portion of a tax on capital equal to this "national sector differential" is borne entirely by consumers in the form of higher prices. For each tax on capital, this study estimates the average national tax rate on capital invested in each sector. The share of the Minnesota tax representing the "national sector differential" is allocated to consumers of products produced in Minnesota. (See *Figure B-1*.)

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

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

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

In summary, to allocate the burden of taxes among capital owners, consumers, and labor, this study divides the tax into three parts (the percentages refer to the example in *Figure B-1*):

1. The portion representing the "national average tax on all capital" is borne by capital (50 percent).

2. The portion representing the "national sector differential" is borne by consumers (33 percent).

3. The portion representing the "Minnesota sector differential" is borne by:
   - Consumers for products sold in "local markets" (13 percent);
   - Labor and landowners for products sold in "national markets" (4 percent).

This approach requires an estimate, for each tax, of the national average tax on all capital. For each tax and each sector, it requires an estimate of the Minnesota differential — the excess of Minnesota taxes over the national average for that sector. The study also needs to estimate, for each sector, the extent to which its products are sold in local as opposed to national markets.

Allocating the Burden Between Minnesota Residents and Nonresidents

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

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

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

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

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

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

Business Tax Allocators

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

Table B-1
Business Tax Allocators

Allocator	Used to Distribute Tax Borne By:
Dividend Income	Corporate Owners
Noncorporate Capital Ownership	Noncorporate Owners
Total Consumer Expenditures	Consumers
Labor Income	Workers
Adjusted Farm Property Tax	Farmers using their own land.
Farm Rents	Farmers leasing their land.

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

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

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

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

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

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

A summary description of the incidence results for the distribution of each business tax to consumers, capital, and labor (both residents and nonresidents) is provided in *Table B-2*.

Table B-2
Distribution of Business Tax Burden by Taxpayer Category (2014)

	Percent Borne by Minnesota Taxpayers			Percent Exported
	Capital	Labor	Consumers	
State Taxes				
Corporation Franchise Tax	5%	8%	42%	45%
Sales and Excise Taxes				
General Sales and Use Tax	5%	0%	62%	33%
Motor Vehicle Sales Tax	34%	1%	6%	58%
Motor Fuels Excise Taxes	0%	0%	29%	71%
Mortgage and Deed Taxes	63%	0%	10%	27%
Gross Earnings Taxes				
Insurance Premiums Taxes	11%	0%	37%	52%
In lieu of property taxes				
Motor Vehicle Registration Tax	18%	9%	31%	42%
Solid Waste Management Taxes	0%	0%	85%	15%
State Property Tax				
Commercial	12%	3%	45%	41%
Industrial	7%	11%	6%	75%
Utility	2%	4%	50%	44%
Local Taxes				
Property Taxes (Pay 2010)				
General Property Tax				
Commercial	12%	3%	45%	41%
Industrial	7%	11%	6%	75%
Farm (other than residence)	100%	0%	0%	0%
Rental Housing	49%	0%	42%	8%
Utility	2%	4%	50%	44%
Mining Production Taxes (taconite)	9%	1%	0%	90%
Local Sales Taxes	5%	0%	62%	33%
Local Gross Earnings Taxes	2%	4%	50%	44%

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.

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Appendix C
Three Versions of the Suits Index

The Suits indexes reported in early editions this study were calculated using summary data for each of the ten population deciles. The calculations were based on (a) each decile's share of total income and (b) each decile's share of the total tax burden. Only ten observations (the ten deciles) were used to calculate this "population-decile" Suits index.

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

In contrast, the "full-sample" Suits index (first reported in the 2007 study) uses each of the 147,306 sample records. It provides a more accurate measure of regressivity or progressivity. In almost every case, the full-sample Suits index for a particular tax is farther from zero than either the population-decile or income-decile Suits index. Using all sample records makes regressive taxes appear more regressive and progressive taxes appear more progressive.

For example, the full-sample Suits index for the income tax in 2014 is +0.258. This exceeds both the population-decile Suits index (+0.228) and the income-decile Suits index (+0.255). The full-sample Suits index shows the income tax to be more progressive. Similarly, the full-sample Suits index shows the sales tax to be more regressive in 2014 (-0.246 compared to -0.228 and -0.240 for the population-decile and income-decile Suits indexes). For the tax system as a whole, the full-sample Suits (at -0.029) suggests greater regressivity than either the population or income decile Suits indexes (both at -0.028).

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

Only the full-sample Suits index is reported on *Tables 2-1* and *3-1* (far-right column). For easy comparison, *Table C-1* shows all three versions of the Suits index for each tax category.

Table C-1

Suits Indexes: Population-Decile, Income-Decile, and Full-Sample (2014 and 2019)

Tax Type	2014 Suits Index			2019 Suits Index		
	Pop.-Decile	Inc.-Decile	Full-Sample	Pop.-Decile	Inc.-Decile	Full-Sample
State Taxes						
Taxes on Income and Estates						
Individual income tax	0.228	0.255	0.258	0.209	0.232	0.235
Corporation franchise tax [1]	-0.183	-0.193	-0.198	-0.171	-0.180	-0.185
Estate tax	0.527	0.817	0.822	0.545	0.837	0.846
Total Income and Estate Taxes	0.202	0.231	0.233	0.191	0.216	0.219
Taxes on Consumption						
Total sales tax	-0.228	-0.240	-0.246	-0.214	-0.225	-0.230
General sales/use tax	-0.240	-0.252	-0.259	-0.225	-0.237	-0.243
Sales tax on motor vehicles	-0.132	-0.135	-0.139	-0.127	-0.129	-0.133
Motor fuels excise taxes	-0.328	-0.350	-0.357	-0.325	-0.345	-0.353
Alcoholic beverage excise taxes	-0.224	-0.233	-0.240	-0.206	-0.215	-0.221
Cigarette and tobacco excise taxes	-0.496	-0.496	-0.512	-0.475	-0.474	-0.490
Insurance premiums taxes	-0.292	-0.312	-0.318	-0.288	-0.306	-0.311
Gambling taxes	-0.487	-0.499	-0.506	-0.484	-0.496	-0.503
MinnesotaCare taxes	-0.296	-0.325	-0.330	-0.291	-0.319	-0.325
Solid waste management taxes	-0.394	-0.405	-0.416	-0.384	-0.395	-0.406
Total Consumption Taxes	-0.272	-0.285	-0.293	-0.256	-0.269	-0.275
Taxes on Property						
State Property Tax	-0.154	-0.156	-0.162	-0.144	-0.145	-0.150
Residential recreational property	-0.232	-0.263	-0.267	-0.228	-0.257	-0.262
Commercial [2]	-0.151	-0.149	-0.154	-0.141	-0.137	-0.142
Industrial	-0.020	-0.016	-0.018	-0.013	-0.008	-0.010
Utility	-0.217	-0.231	-0.237	-0.204	-0.218	-0.224
Motor vehicle registration tax	-0.178	-0.206	-0.210	-0.176	-0.201	-0.205
Mortgage and deed taxes	0.008	0.015	0.012	0.010	0.020	0.017
Total Property Taxes	-0.144	-0.159	-0.163	-0.138	-0.150	-0.154
Property Tax Refunds						
Homeowners	0.632	0.631	0.640	0.692	0.688	0.698
Renters	0.875	0.855	0.879	0.895	0.867	0.899
Total Property Tax Refunds	0.719	0.711	0.725	0.760	0.748	0.765
Total State Taxes	0.023	0.033	0.032	0.032	0.041	0.040
Local Taxes						
Property Taxes	-0.158	-0.182	-0.185	-0.165	-0.183	-0.185
General Property Tax	-0.159	-0.183	-0.185	-0.165	-0.183	-0.186
Homeowners (before PTR)	-0.142	-0.172	-0.175	-0.140	-0.169	-0.172
Residential recreational property	-0.232	-0.263	-0.267	-0.228	-0.257	-0.262
Commercial [2]	-0.151	-0.149	-0.154	-0.141	-0.137	-0.142
Industrial	-0.020	-0.016	-0.018	-0.013	-0.008	-0.010
Farm (other than residence) [3]	-0.010	-0.113	-0.100	-0.079	-0.139	-0.127
Rental Housing (before PTR)	-0.322	-0.303	-0.310	-0.318	-0.297	-0.303
Utility	-0.217	-0.231	-0.237	-0.204	-0.218	-0.224
Mining Production Taxes (taconite)	0.223	0.281	0.283	0.221	0.278	0.280
Taxes on consumption						
Local Sales Taxes	-0.240	-0.252	-0.259	-0.225	-0.237	-0.243
Local Gross Earnings Taxes	-0.217	-0.231	-0.237	-0.204	-0.218	-0.224
Total Local Taxes	-0.162	-0.186	-0.189	-0.168	-0.185	-0.188
Total State and Local Taxes	-0.028	-0.028	-0.029	-0.025	-0.023	-0.024

[1] Includes taconite/iron ore occupation tax.

[2] Includes resorts and railroads.

[3] Includes timber.

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Appendix D
Tax Incidence by Type of Tax (2012)

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 business. The sum of these three parts equals the total tax collected in 2012. The business portion is based on this study's definition of business taxes. (See pages 8-10 of this study.)
- The total dollars of tax burden that fall on Minnesota residents – after shifting of any business portion of the tax. This equals the sum of (a) the tax imposed on Minnesota households and (b) any portion of the tax imposed on business that is borne by Minnesota residents.
- The total dollars of tax burden "exported" to nonresident households. This equals the sum of (a) the tax imposed on non-resident households and (b) any portion of the tax imposed on business that is shifted to nonresidents.
- The share of the total burden on Minnesota residents that is imposed directly on Minnesota households and the shares that represent business tax that is shifted to Minnesota consumers (in higher prices), shifted to Minnesota labor (in lower wages or benefits), or borne by Minnesota capital (as owners of businesses).

Chart

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

Bottom Table

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

Appendix D Tables

State Taxes

Income and Estate Taxes

Consumption Taxes

Property Taxes

Local Taxes

Appendix D Tables (cont.)

State and Local Property Taxes by Type of Property

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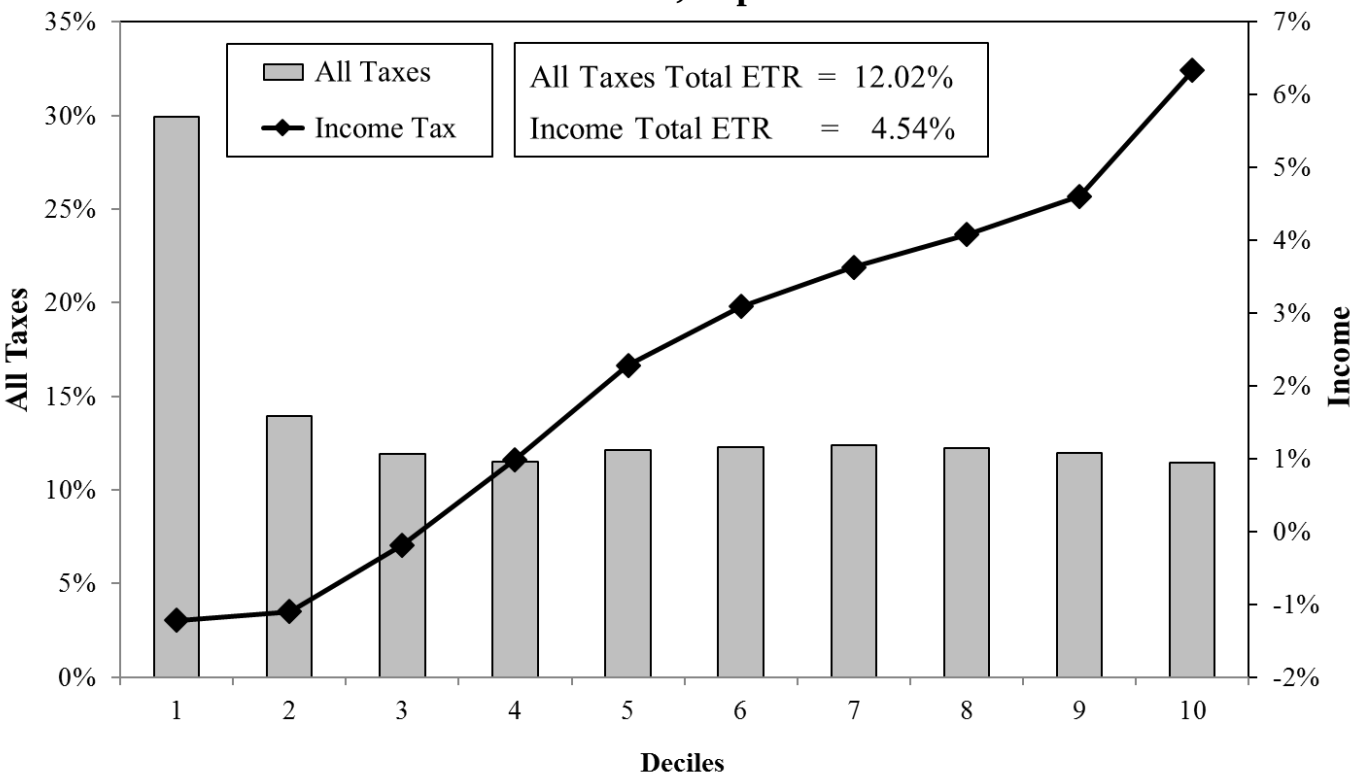
2014 Incidence Estimate for Individual Income Tax

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$10,032	$9,459	$573	$0	$9,459	$573

* 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Income	-1.22%	-1.10%	-0.19%	0.99%	2.29%	3.09%	3.63%	4.08%	4.61%	6.33%	4.99%	5.81%	7.75%	0.258

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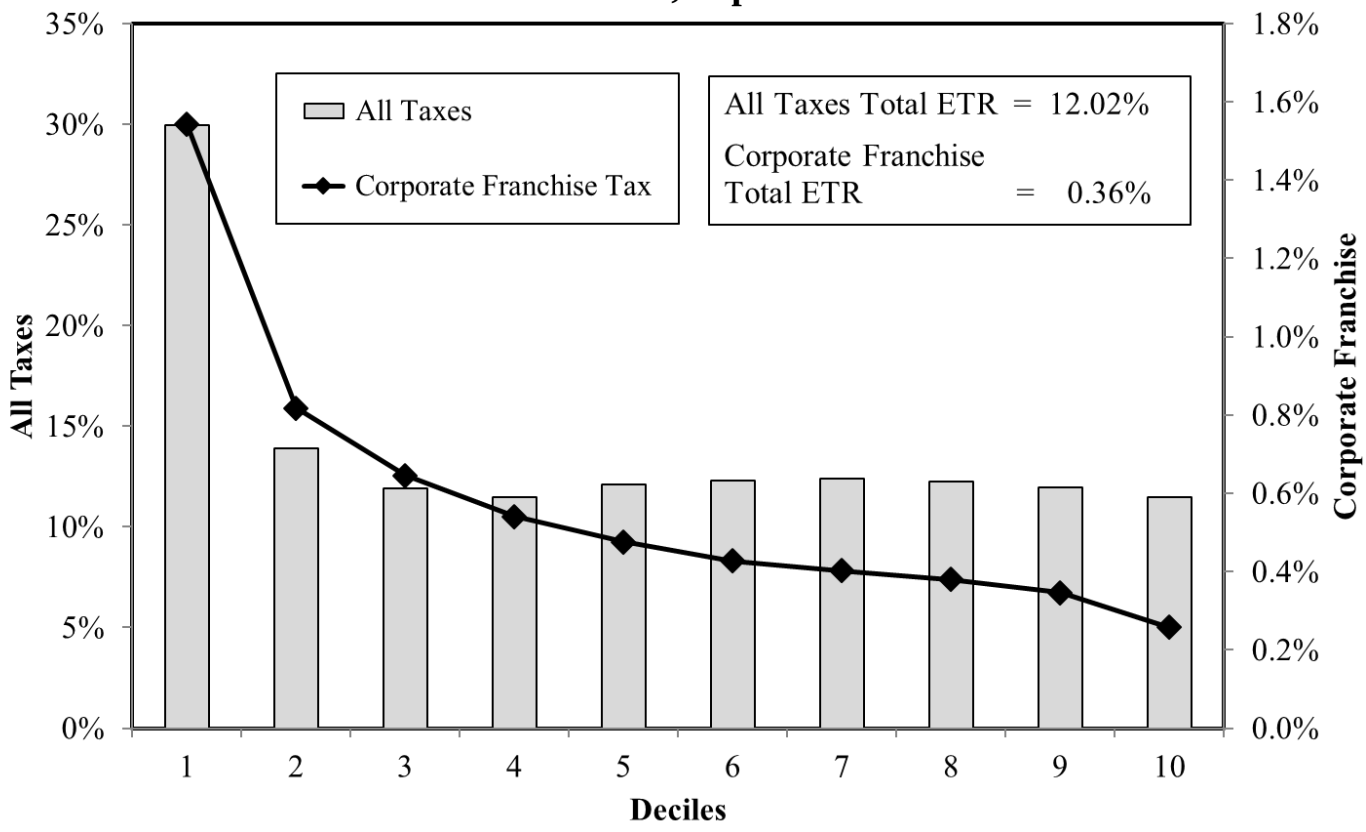
2014 Incidence Estimate for Corporate Franchise Tax[1]

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$1,381	$0	$0	$1,381	$759	$622

* Shifting allocations: Direct = 0%, Consumers = 72%, Labor = 20%, Capital = 8%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Corporate Franchise	1.54%	0.82%	0.65%	0.54%	0.48%	0.43%	0.40%	0.38%	0.35%	0.26%	0.32%	0.27%	0.20%	-0.198

[1]Includes Corporate Franchise Tax ($1,166.7 million) and Mining Occupation Tax ($14.7 million).

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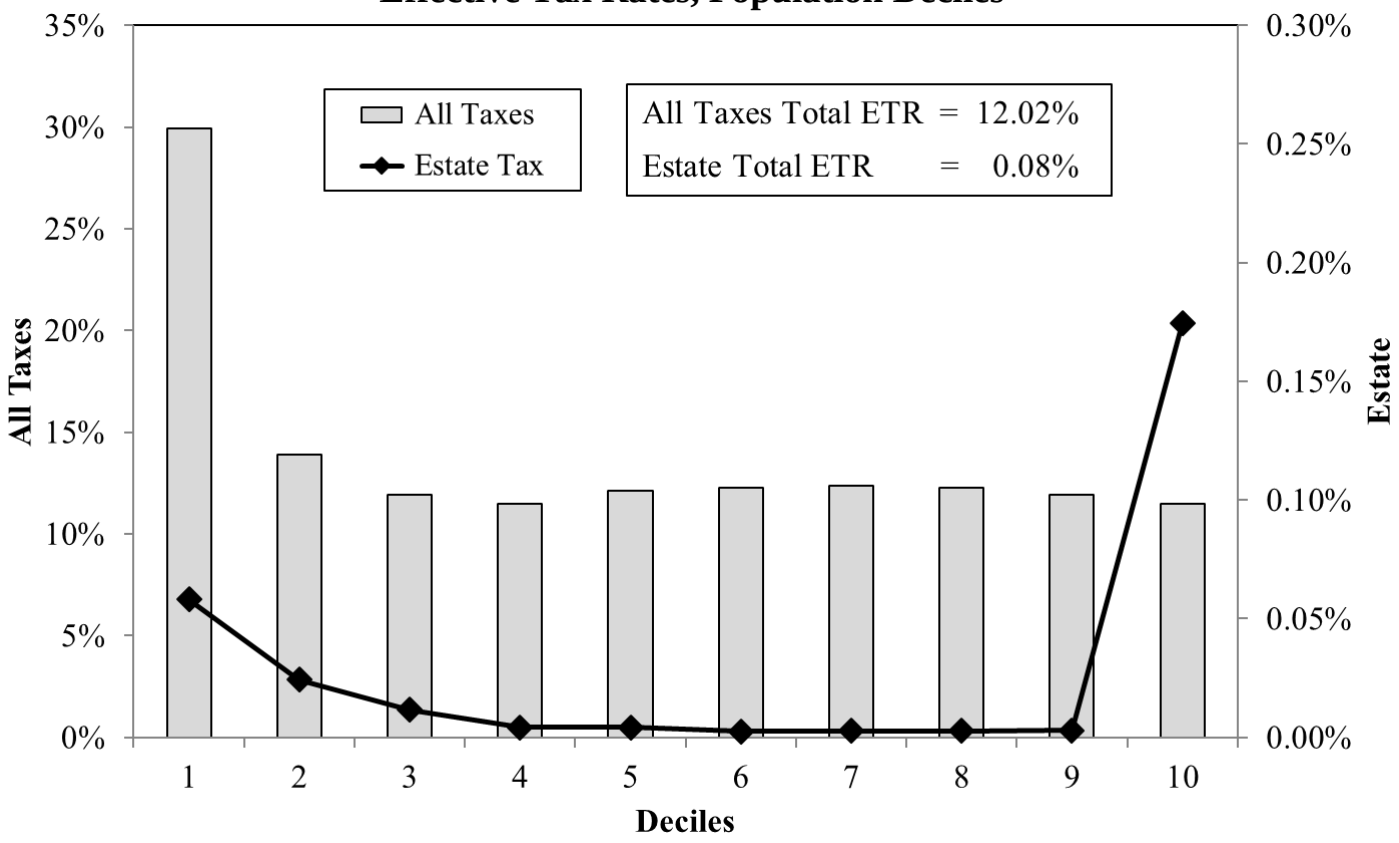
2014 Incidence Estimate for
Estate Tax

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$161	$161	$0	$0	$161	$0

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

Effective Tax Rates, Population Deciles



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Estate	0.06%	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.17%	0.00%	0.02%	0.44%	0.822

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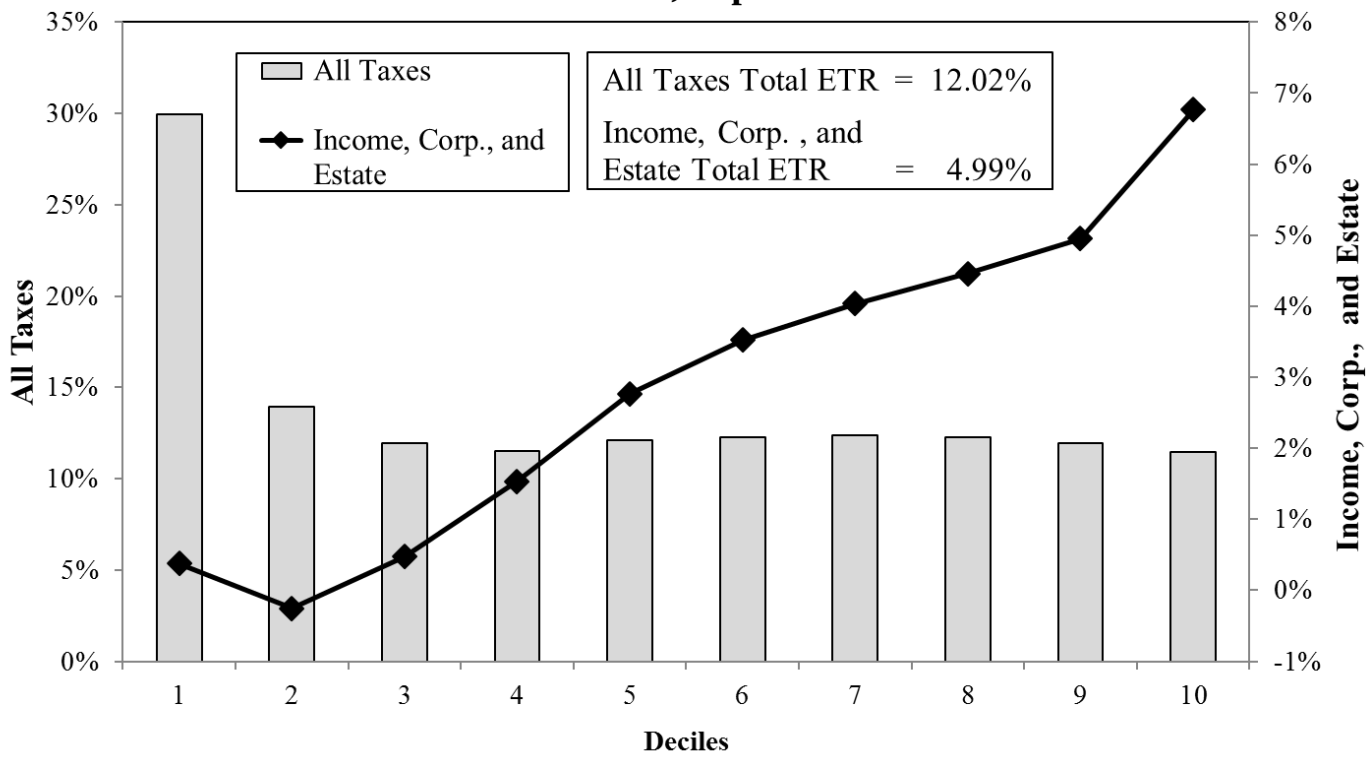
2014 Incidence Estimate for
Total Income, Corporate, and Estate Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$11,574	$9,620	$573	$1,381	$10,379	$1,195

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Income, Corp., and Estate	0.38%	-0.26%	0.47%	1.53%	2.77%	3.52%	4.04%	4.46%	4.95%	6.76%	5.31%	6.11%	8.39%	0.233

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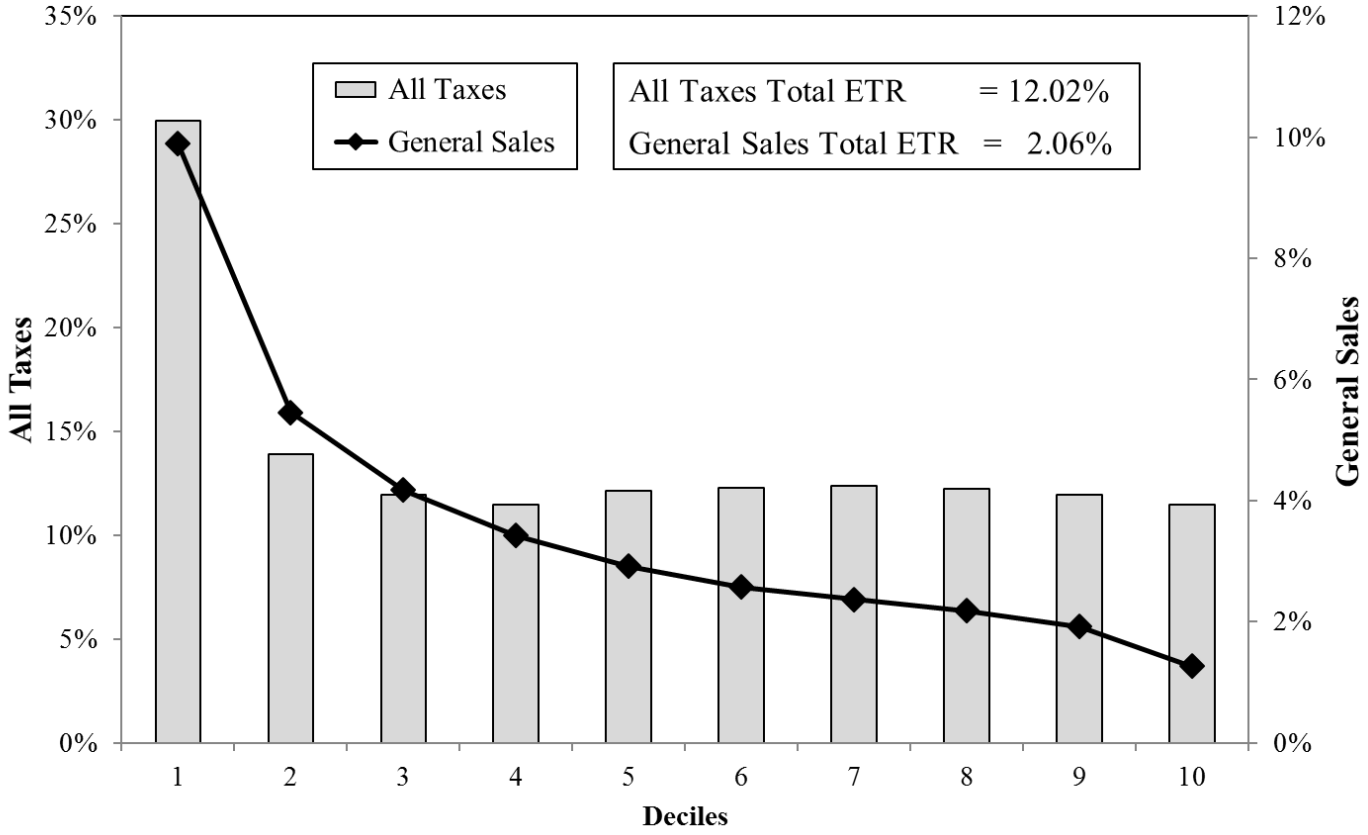
2014 Incidence Estimate for
General Sales and Use Tax

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$5,438	$2,583	$303	$2,552	$4,297	$1,141

* Shifting allocations: Direct = 66%, Consumers = 31%, Labor = 0%, Capital = 3%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
General Sales	9.89%	5.46%	4.18%	3.42%	2.92%	2.57%	2.37%	2.18%	1.92%	1.27%	1.68%	1.37%	0.89%	-0.259

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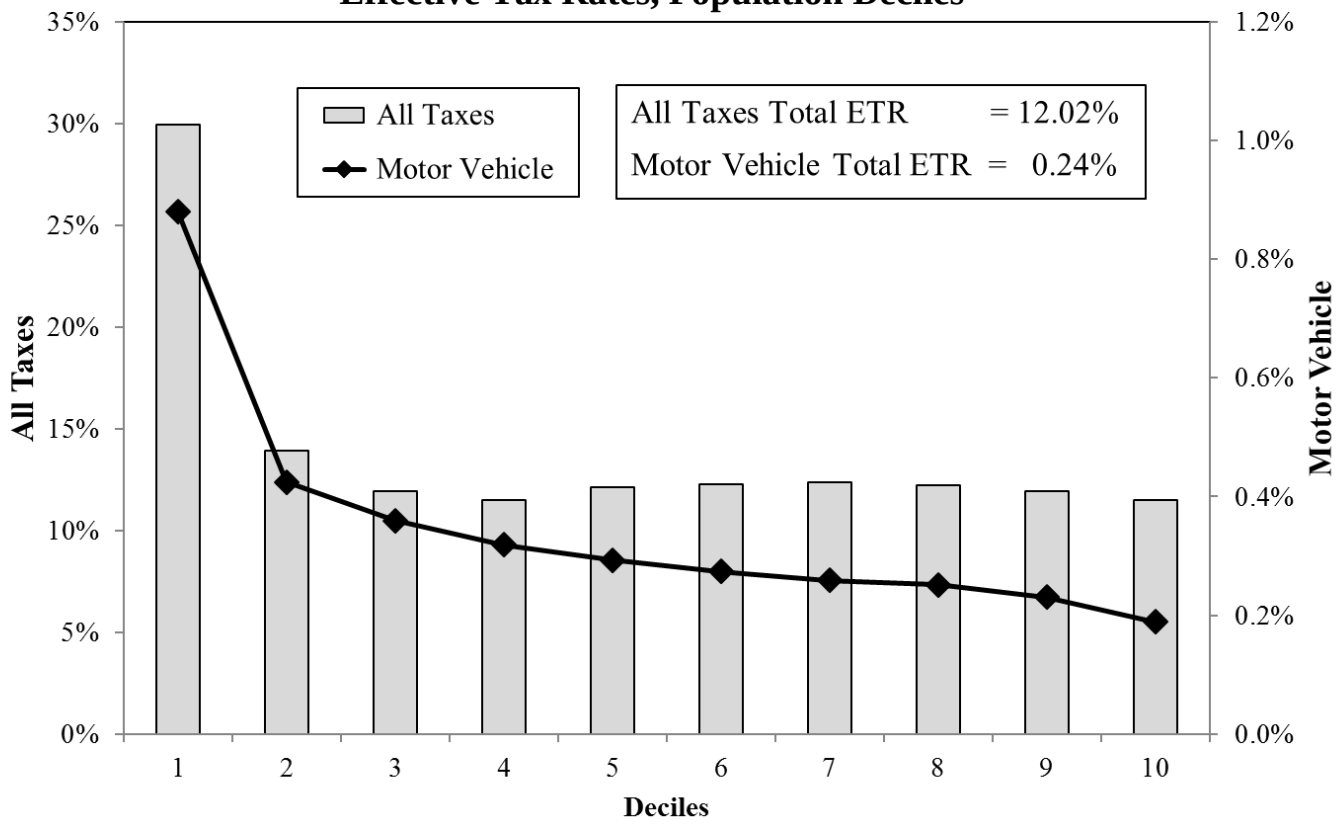
2014 Incidence Estimate for
Sales Tax on Motor Vehicles

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$668	$380	$0	$288	$500	$168

* Shifting allocations: Direct = 69%, Consumers = 2%, Labor = 1%, Capital = 28%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Motor Vehicle	0.88%	0.42%	0.36%	0.32%	0.29%	0.27%	0.26%	0.25%	0.23%	0.19%	0.21%	0.19%	0.17%	-0.139

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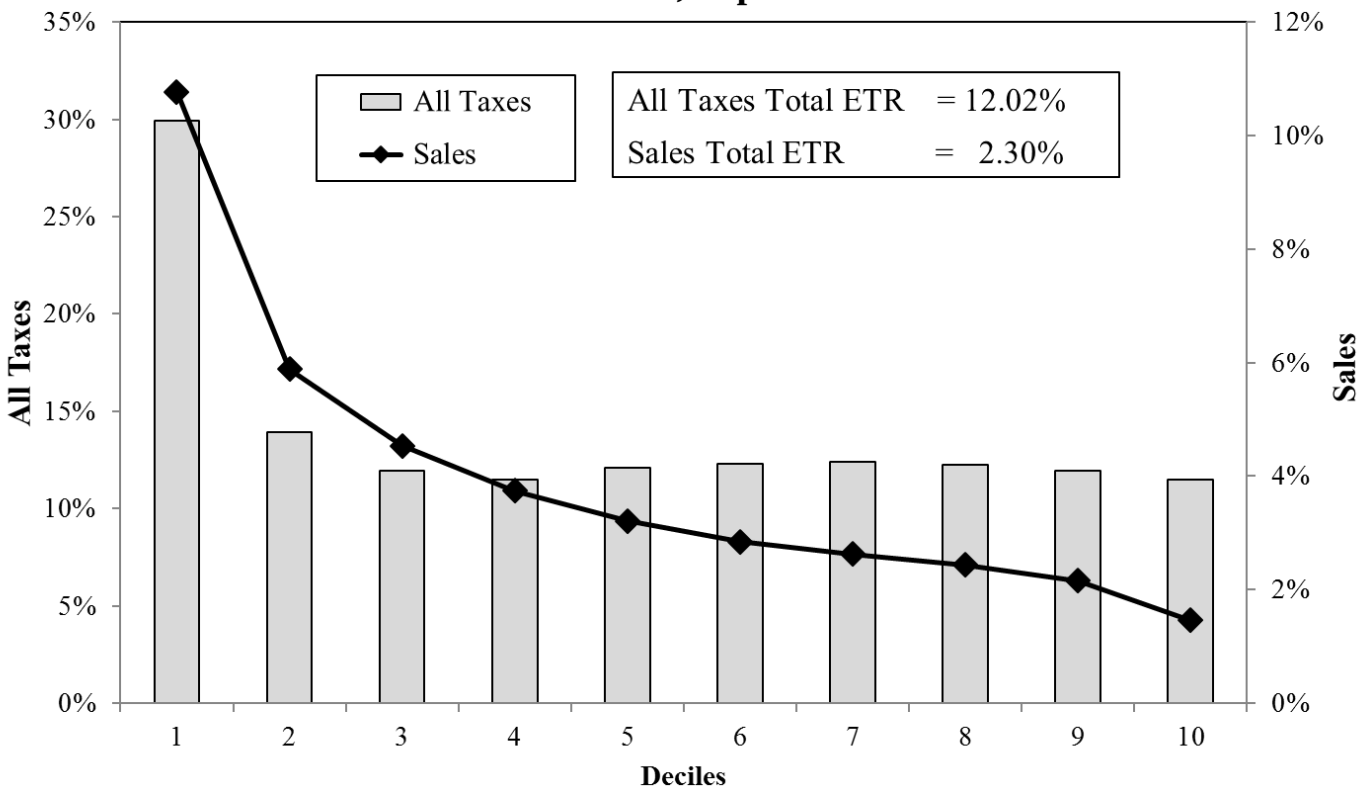
2014 Incidence Estimate for
Total State Sales Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$6,106	$2,963	$303	$2,840	$4,797	$1,309

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Sales	10.77%	5.88%	4.54%	3.74%	3.21%	2.85%	2.63%	2.43%	2.15%	1.46%	1.89%	1.56%	1.07%	-0.246

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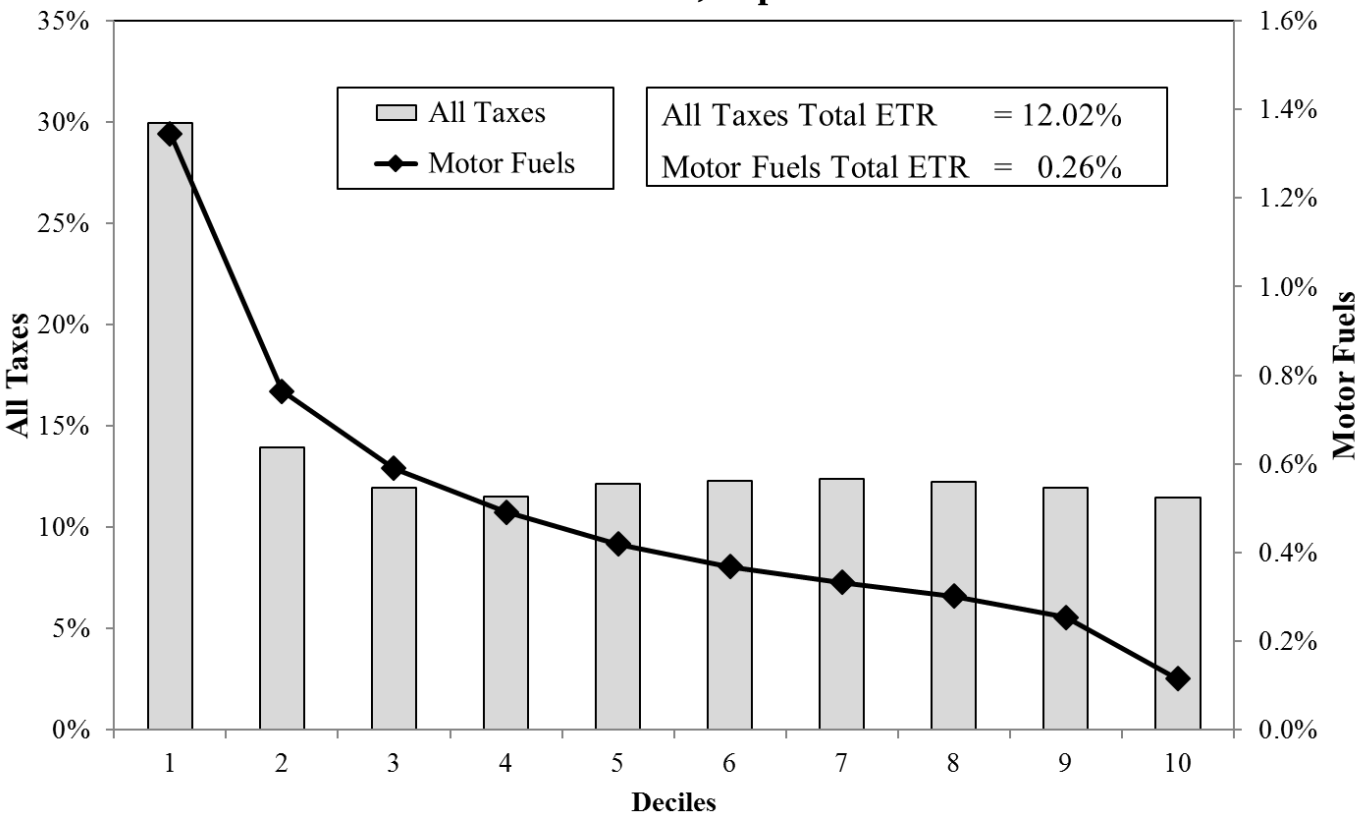
2014 Incidence Estimate for
Motor Fuels Excise Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$888	$422	$50	$417	$542	$346

* Shifting allocations: Direct = 84%, Consumers = 16%, 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Motor Fuels	1.35%	0.76%	0.59%	0.49%	0.42%	0.37%	0.33%	0.30%	0.25%	0.11%	0.20%	0.13%	0.04%	-0.357

back

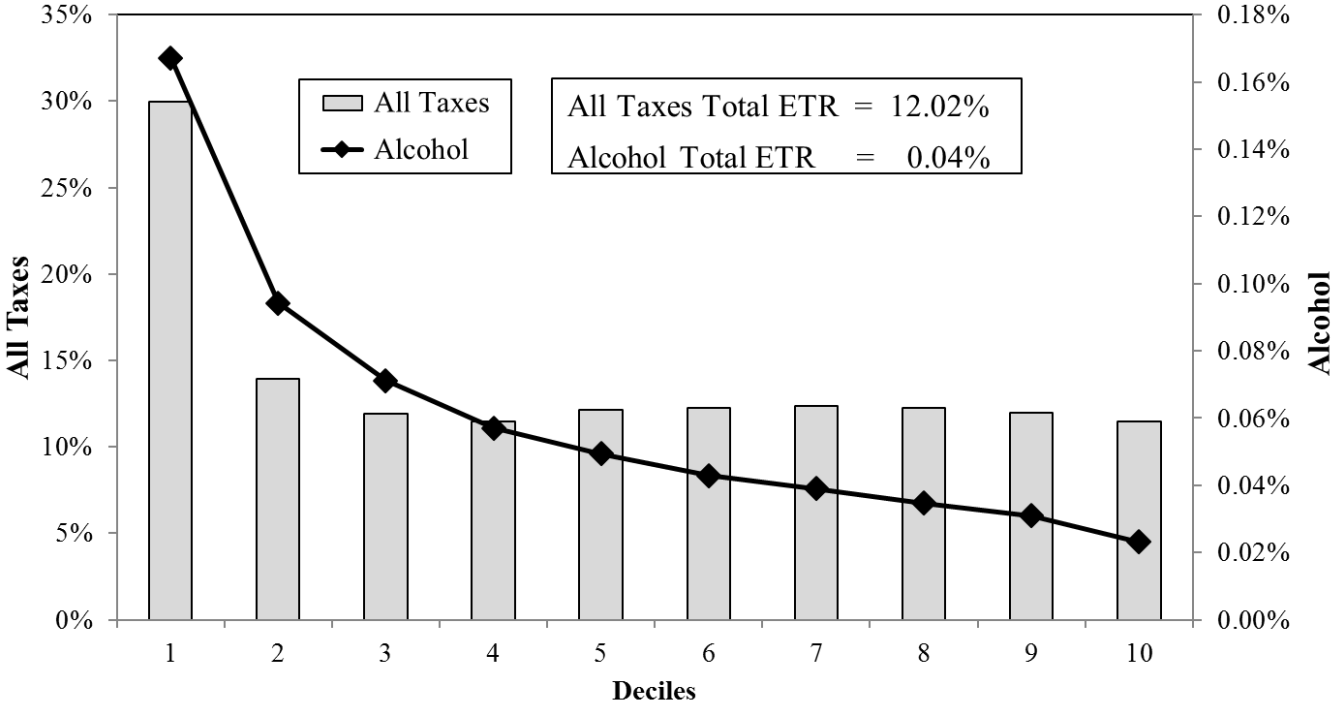
2014 Incidence Estimate for
Alcoholic Beverage Excise Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$85	$73	$12	$0	$73	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Alcohol	0.17%	0.09%	0.07%	0.06%	0.05%	0.04%	0.04%	0.03%	0.03%	0.02%	0.03%	0.03%	0.02%	-0.240

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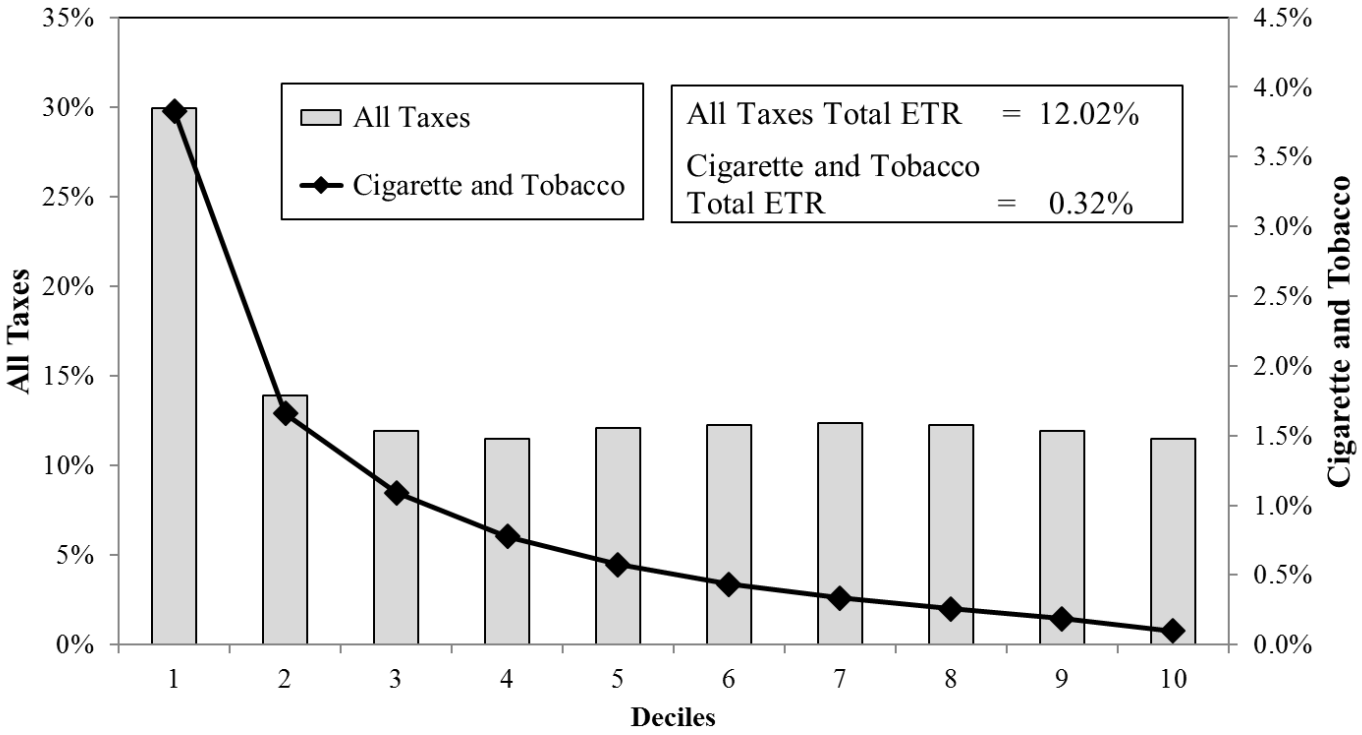
2014 Incidence Estimate for Cigarette and Tobacco Excise Taxes[1]

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$657	$657	$0	$0	$657	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Cigatette and Tobacco	3.83%	1.66%	1.09%	0.78%	0.57%	0.43%	0.34%	0.26%	0.19%	0.10%	0.15%	0.11%	0.06%	-0.512

[1]Includes Cigarette Tax and Fee ($571.4 million) and Tobacco Products Tax and Fee ($85.2 million).

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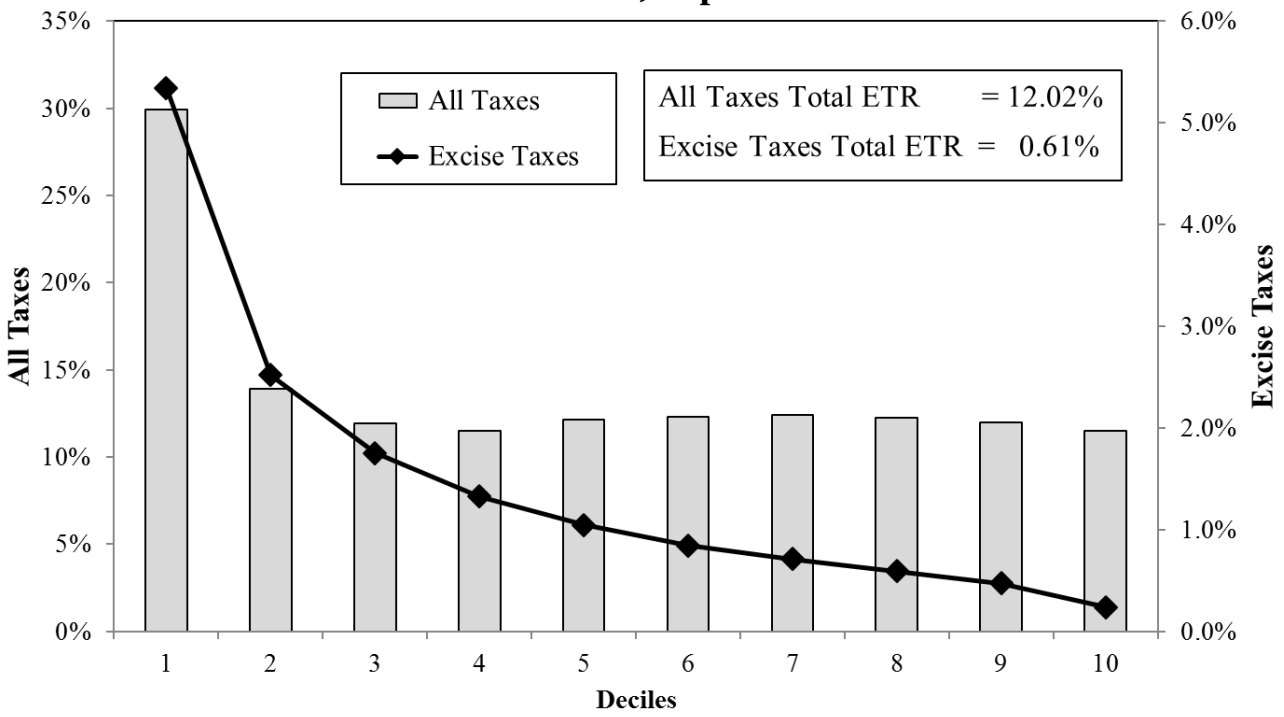
2014 Incidence Estimate for
Total Excise Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$1,629	$1,151	$61	$417	$1,271	$358

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Excise Taxes	5.34%	2.52%	1.75%	1.32%	1.04%	0.84%	0.71%	0.59%	0.47%	0.24%	0.38%	0.26%	0.12%	-0.430

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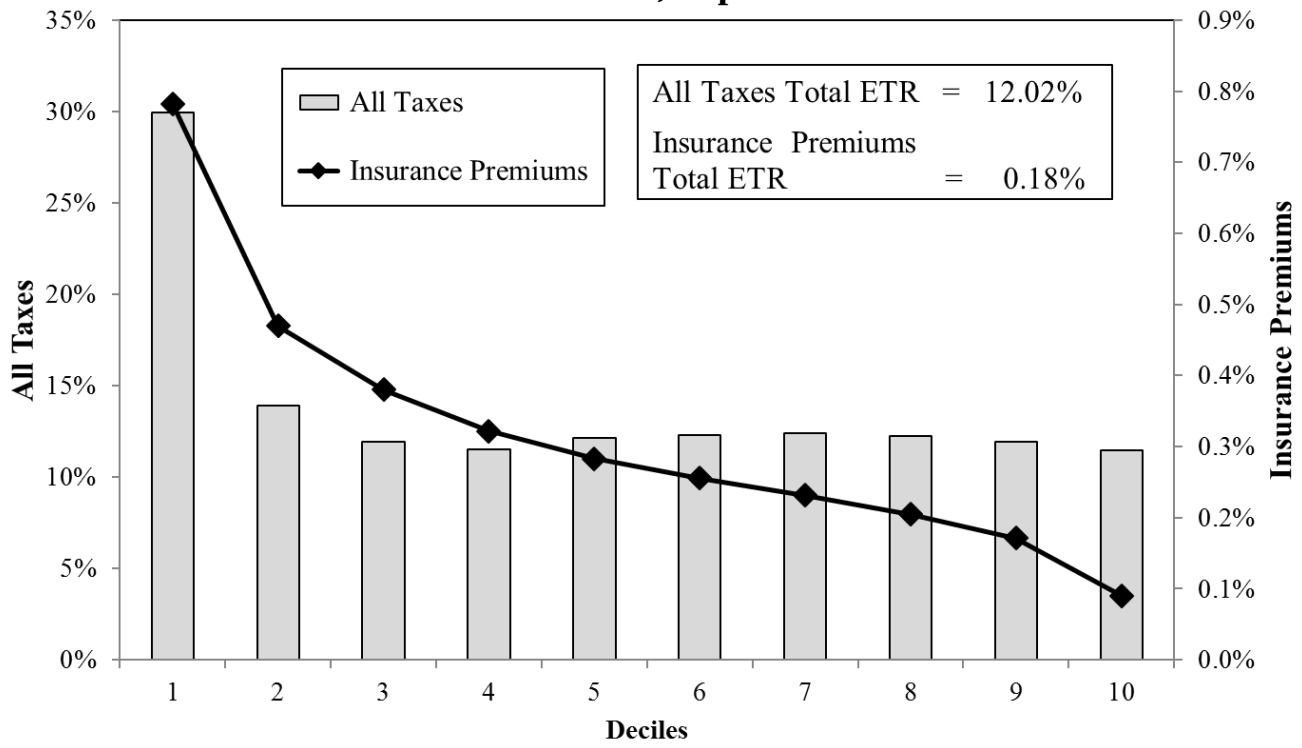
2014 Incidence Estimate for
Insurance Premiums Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$440	$314	$0	$126	$374	$66

* Shifting allocations: Direct = 85%, Consumers = 12%, Labor = 0%, Capital = 3%

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Insurance Premiums	0.78%	0.47%	0.38%	0.32%	0.28%	0.26%	0.23%	0.20%	0.17%	0.09%	0.14%	0.10%	0.05%	-0.318

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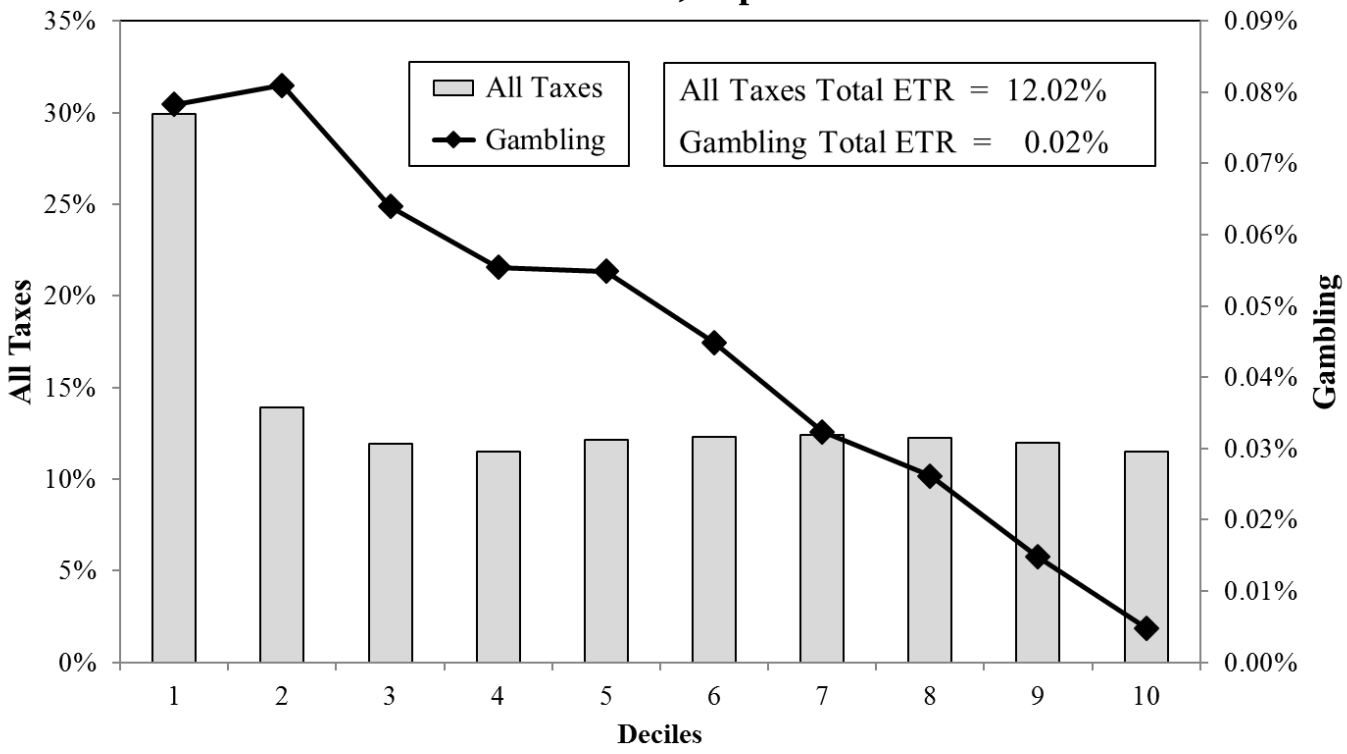
2014 Incidence Estimate for Gambling Taxes[1]

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$47	$46	$0	$0	$46	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Gambling	0.08%	0.08%	0.06%	0.06%	0.05%	0.04%	0.03%	0.03%	0.01%	0.00%	0.01%	0.01%	0.00%	-0.506

[1]Gambling taxes include Lawful Gambling ($2.3 million), Combined Receipts ($43.9 million), and Pari-Mutuel ($0.6 million).

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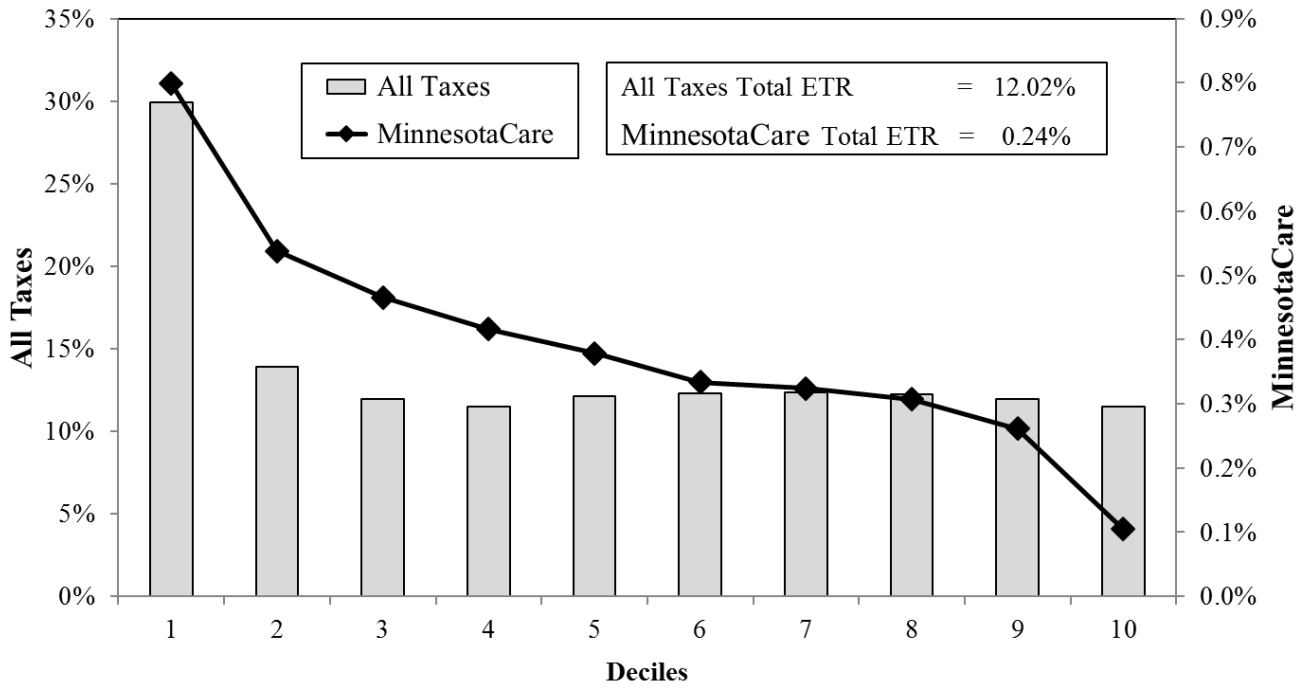
2014 Incidence Estimate for MinnesotaCare Taxes[1]

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$540	$495	$45	$0	$495	$45

* 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
MinnesotaCare	0.80%	0.54%	0.47%	0.42%	0.38%	0.33%	0.32%	0.31%	0.26%	0.10%	0.20%	0.12%	0.03%	-0.330

[1]Includes the Provider Tax ($211.3 million), the Hospital Tax ($217.1 million), and the Drug Distributor Tax ($111.6 million).

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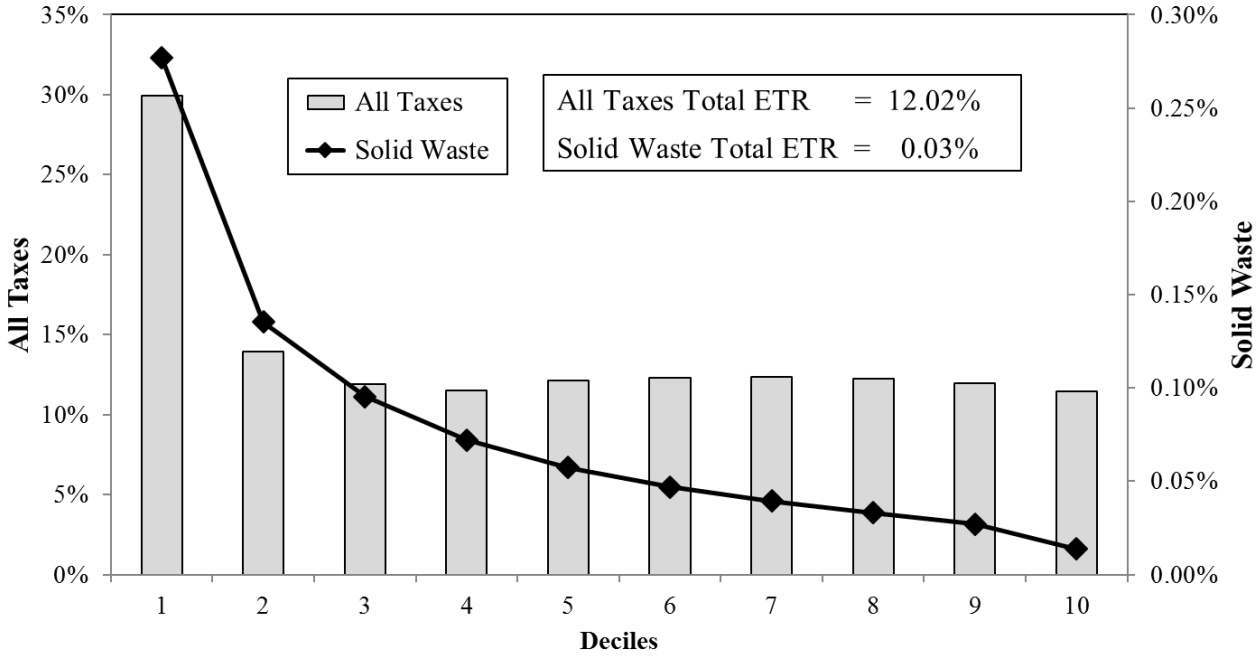
2014 Incidence Estimate for
Solid Waste Management Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$77	$36	$0	$41	$71	$6

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

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Solid Waste	0.28%	0.14%	0.10%	0.07%	0.06%	0.05%	0.04%	0.03%	0.03%	0.01%	0.02%	0.02%	0.01%	-0.416

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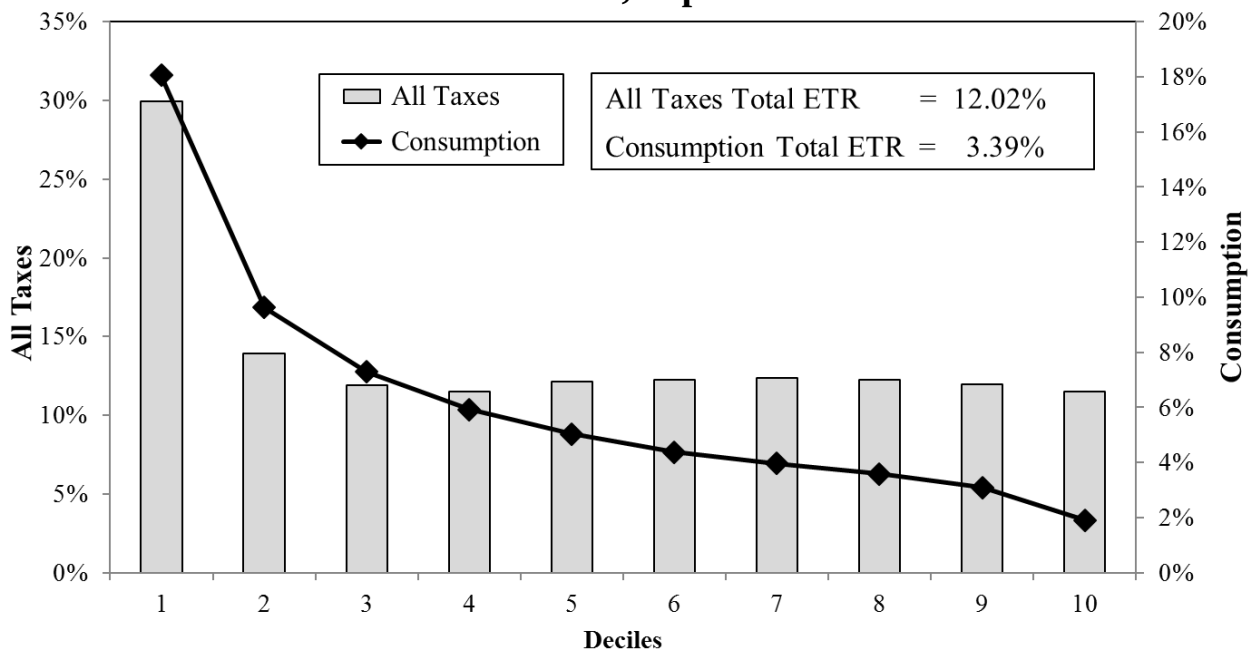
2014 Incidence Estimate for
Total State Consumption Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$8,839	$5,005	$410	$3,424	$7,054	$1,785

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Consumption	18.05%	9.63%	7.29%	5.93%	5.03%	4.37%	3.96%	3.59%	3.10%	1.91%	2.64%	2.05%	1.27%	-0.293

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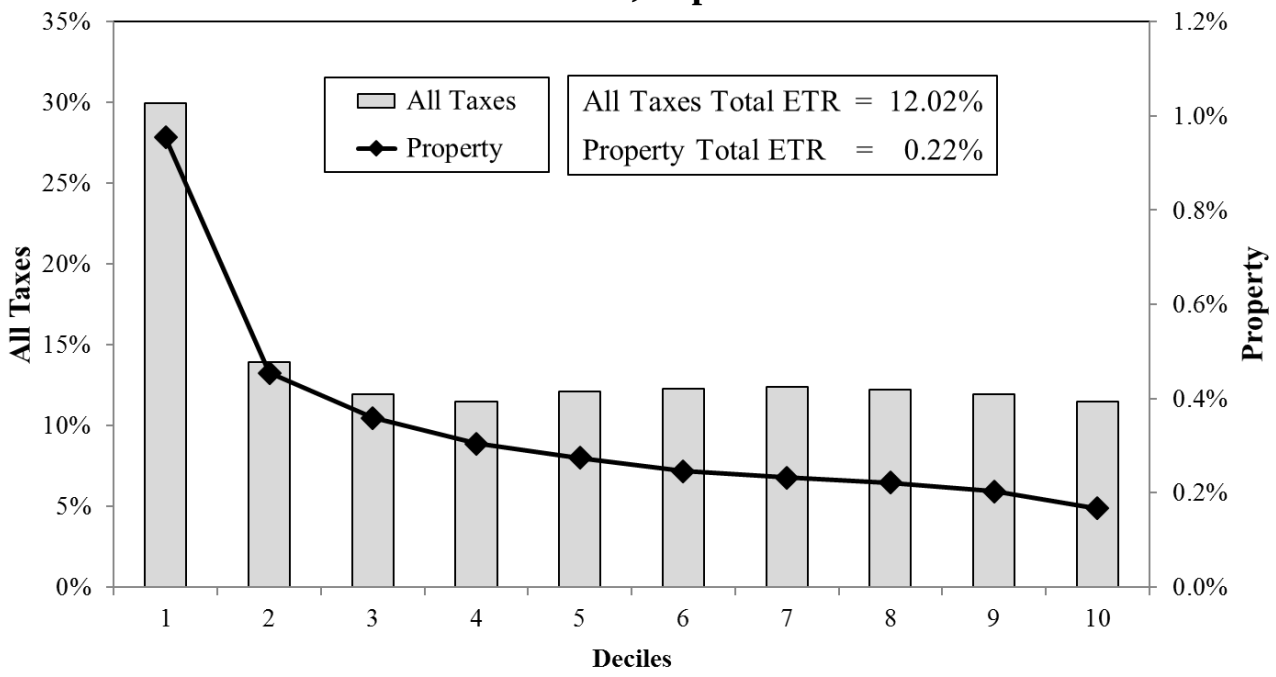
2014 Incidence Estimate for
State Property Tax[1]

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$847	$33	$8	$806	$455	$392

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Property	0.95%	0.45%	0.36%	0.30%	0.27%	0.25%	0.23%	0.22%	0.20%	0.17%	0.18%	0.17%	0.15%	-0.162

[1]Includes taxes on Residential Recreational Property ($41.0 million), Commercial Property ($551.9 million), Industrial Property ($153.7 million), and Utility Property ($100.2 million).

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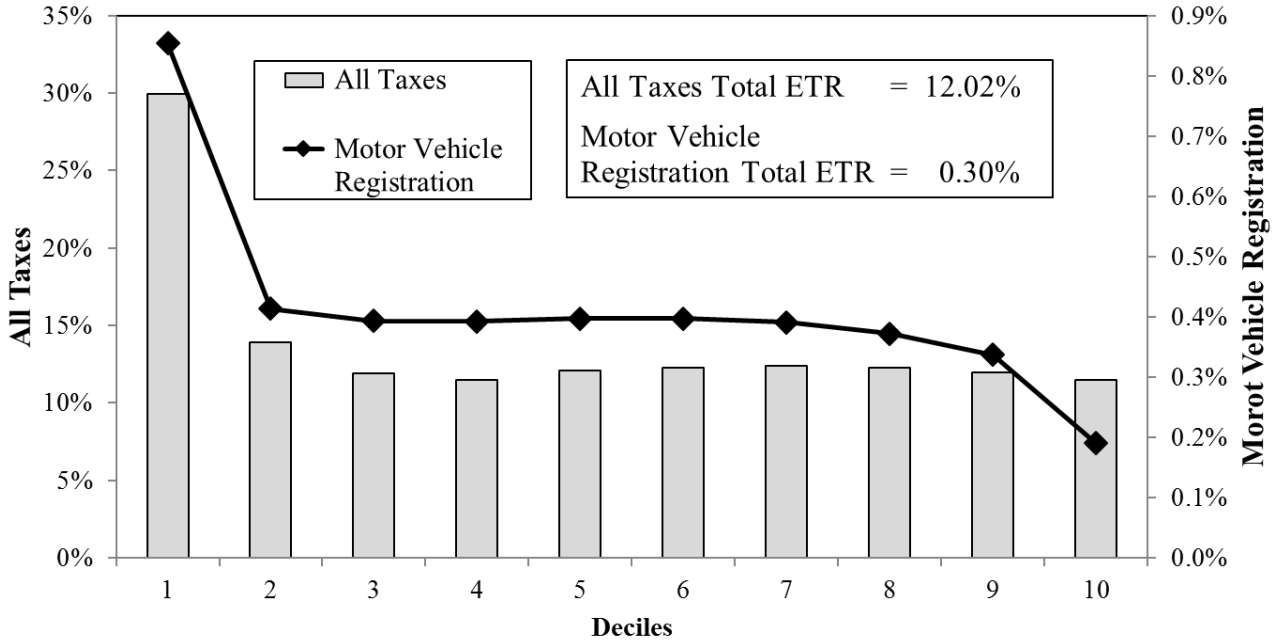
2014 Incidence Estimate for
Motor Vehicle Registration Tax

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$669	$561	$0	$109	$624	$46

* Shifting allocations: Direct = 90%, Consumers = 5, Labor = 2, Capital = 3%

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Motor Vehicle Registration	0.85%	0.41%	0.39%	0.39%	0.40%	0.40%	0.39%	0.37%	0.34%	0.19%	0.29%	0.22%	0.09%	-0.210

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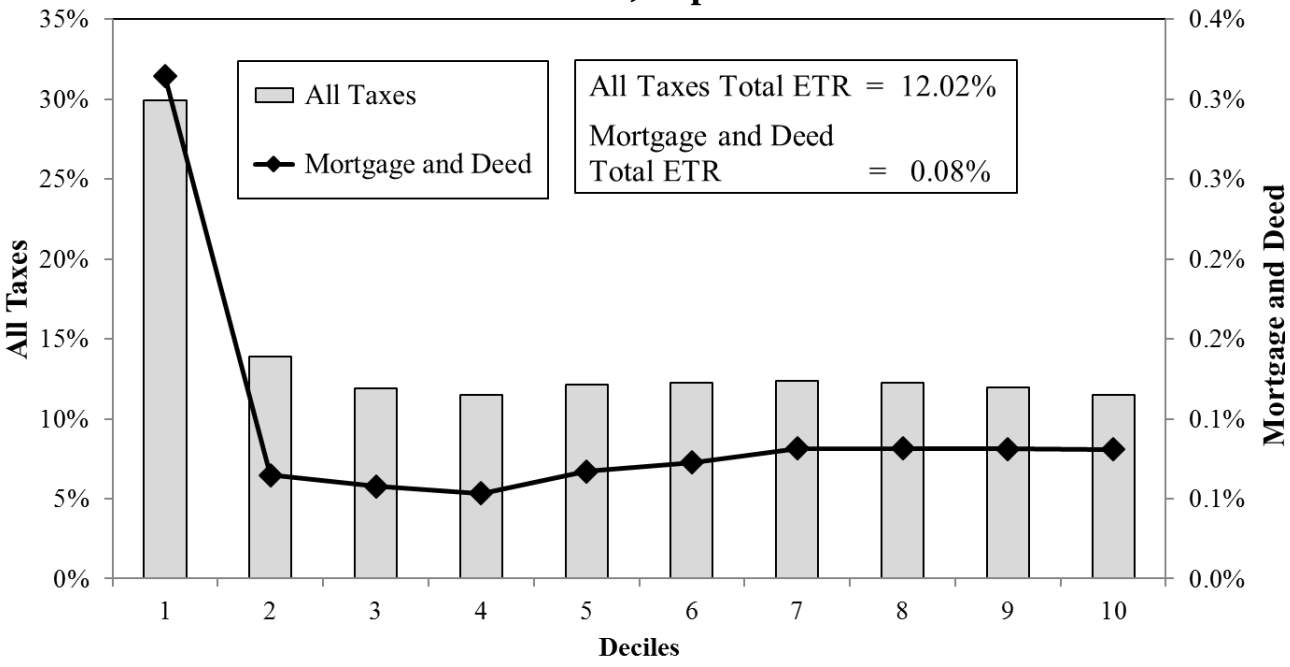
2014 Incidence Estimate for Mortgage and Deed Taxes[1]

Tax Collection Amounts 2014 ($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$194	$92	$0	$101	$166	$28

* Shifting allocations: Direct = 59%, Consumers = 6%, Labor = 0%, Capital = 35%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Mortgage and Deed	0.31%	0.06%	0.06%	0.05%	0.07%	0.07%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.09%	0.012

[1]Includes Mortgage Registry Tax ($100.4 million) and Deed Transfer Tax ($93.5 million).

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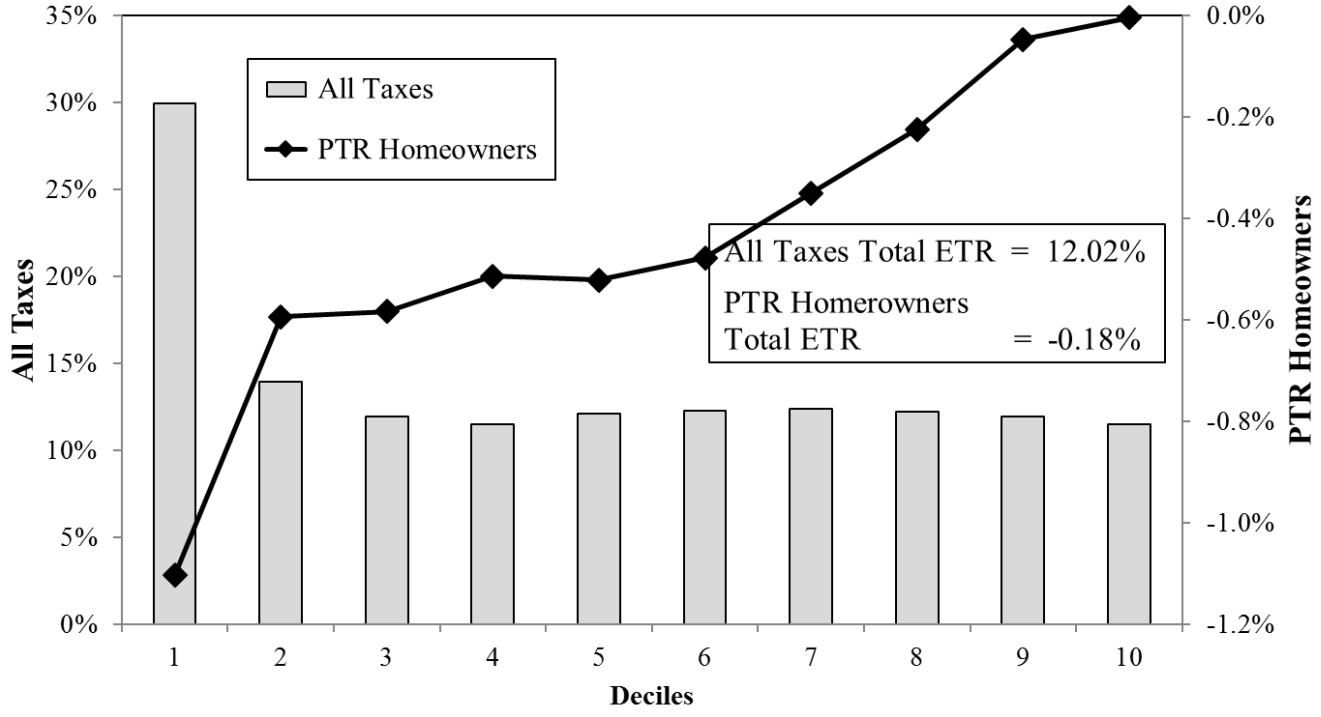
2014 Incidence Estimate for
Property Tax Refunds - Homeowners

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
-$378	-$378	$0	$0	-$378	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
PTR Homeowners	-1.10%	-0.59%	-0.58%	-0.51%	-0.52%	-0.48%	-0.35%	-0.22%	-0.05%	0.00%	-0.01%	0.00%	0.00%	0.640

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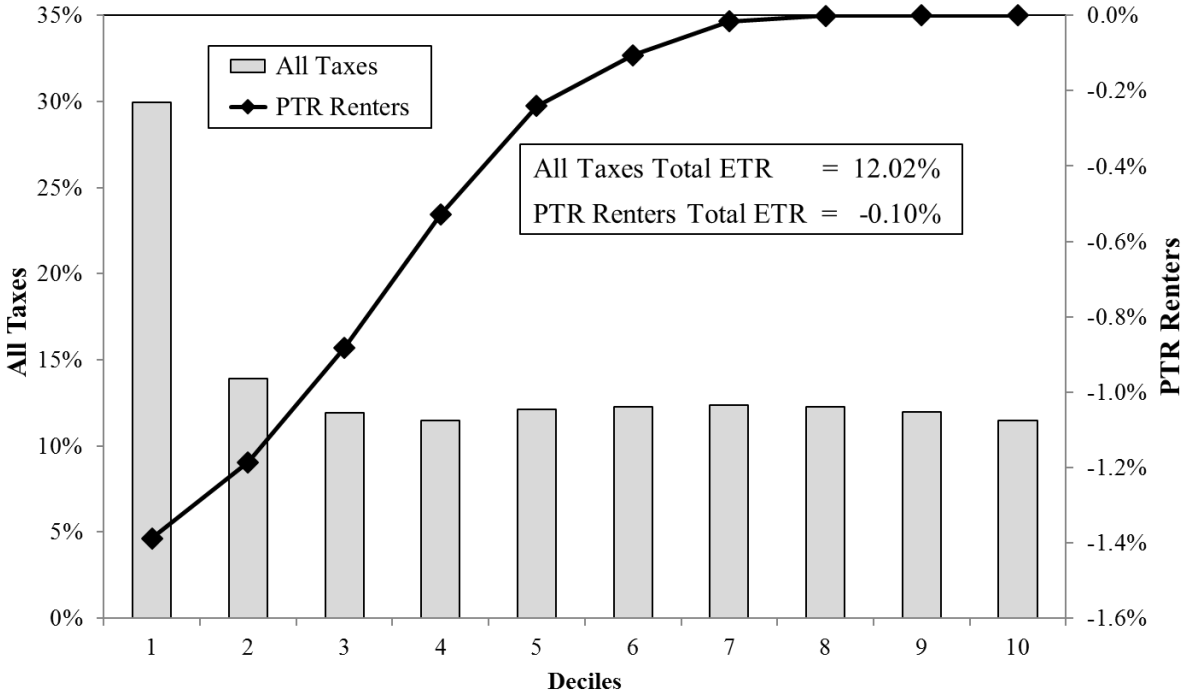
2014 Incidence Estimate for
Property Tax Refunds - Renters

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-$211	-$211	$0	$0	-$211	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
PTR Renters	-1.39%	-1.19%	-0.88%	-0.53%	-0.24%	-0.11%	-0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.879

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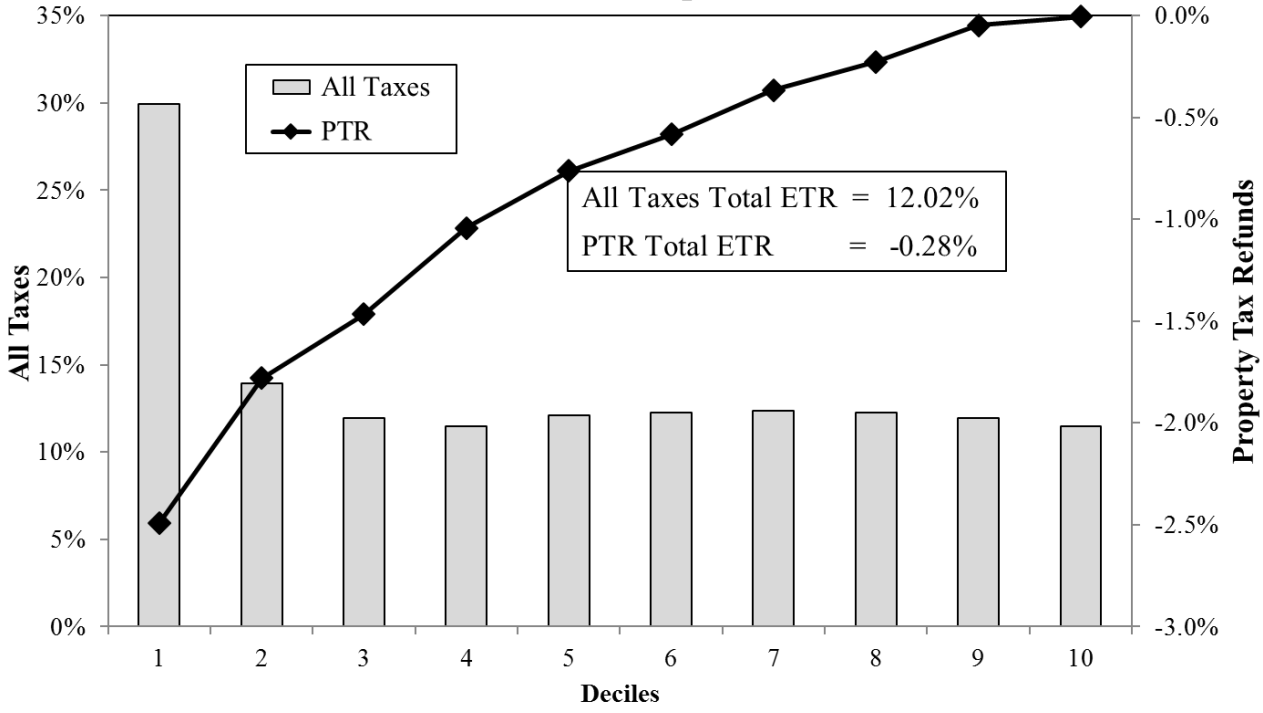
2014 Incidence Estimate for
Total Property Tax Refunds

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-$588	-$588	$0	$0	-$588	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
PTR	-2.49%	-1.78%	-1.47%	-1.04%	-0.76%	-0.58%	-0.37%	-0.23%	-0.05%	0.00%	-0.01%	0.00%	0.00%	0.725

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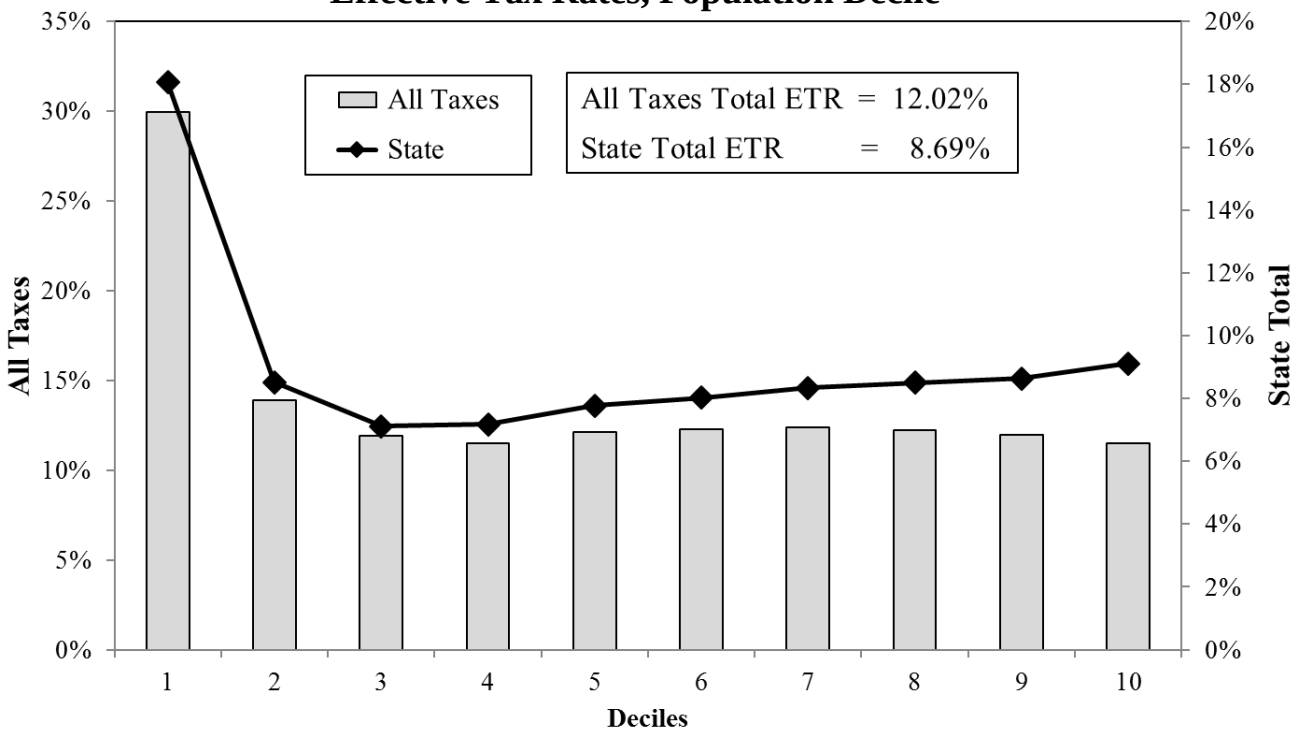
2014 Incidence Estimate for
Total State Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$21,535	$14,723	$991	$5,821	$18,090	$3,445

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
State	18.06%	8.52%	7.11%	7.17%	7.77%	8.03%	8.34%	8.50%	8.63%	9.11%	8.51%	8.62%	9.99%	0.032

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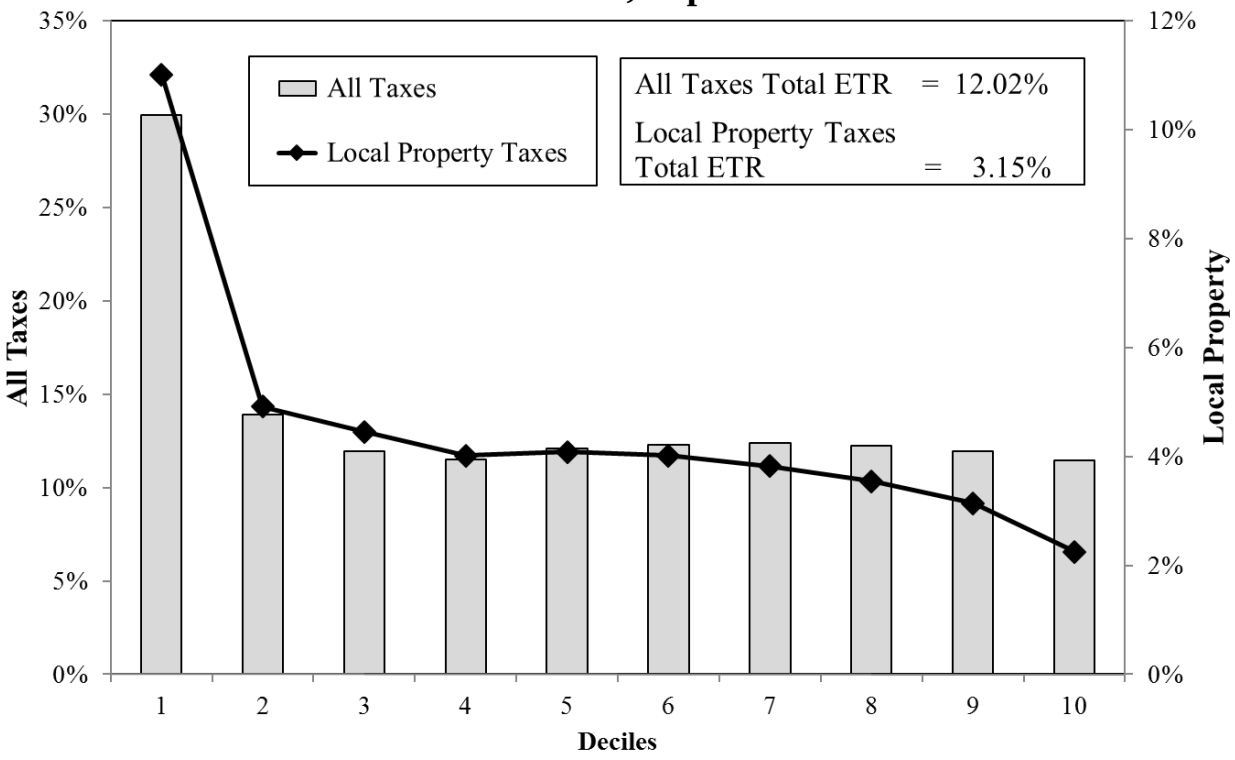
2014 Incidence Estimate for
Local Property Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$7,789	$3,751	$38	$4,000	$6,548	$1,241

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Local Property	11.02%	4.92%	4.45%	4.01%	4.08%	4.02%	3.83%	3.54%	3.14%	2.25%	3.30%	2.33%	1.44%	-0.185

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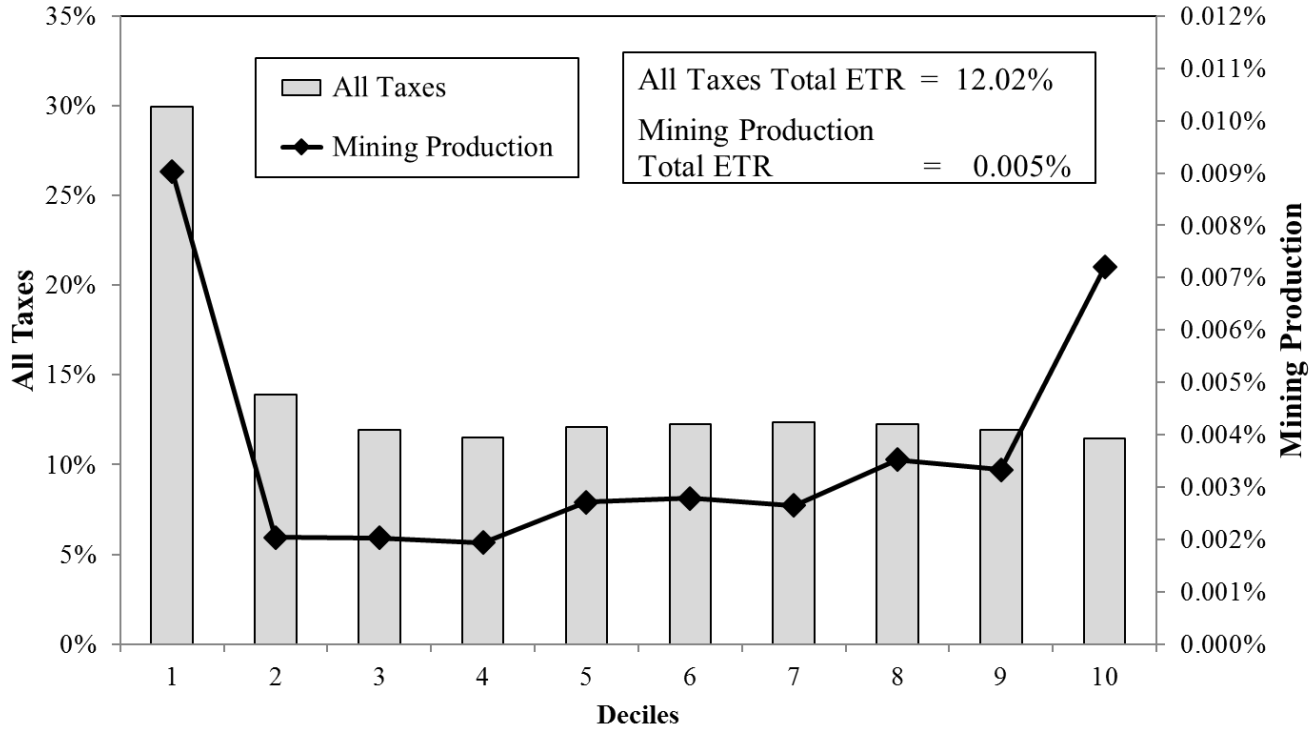
2014 Incidence Estimate for
Mining Production Taxes (Taconite)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$102	$0	$0	$102	$10	$92

* 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Mining Production	0.009%	0.002%	0.002%	0.002%	0.003%	0.003%	0.003%	0.004%	0.003%	0.007%	0.004%	0.006%	0.01%	0.283

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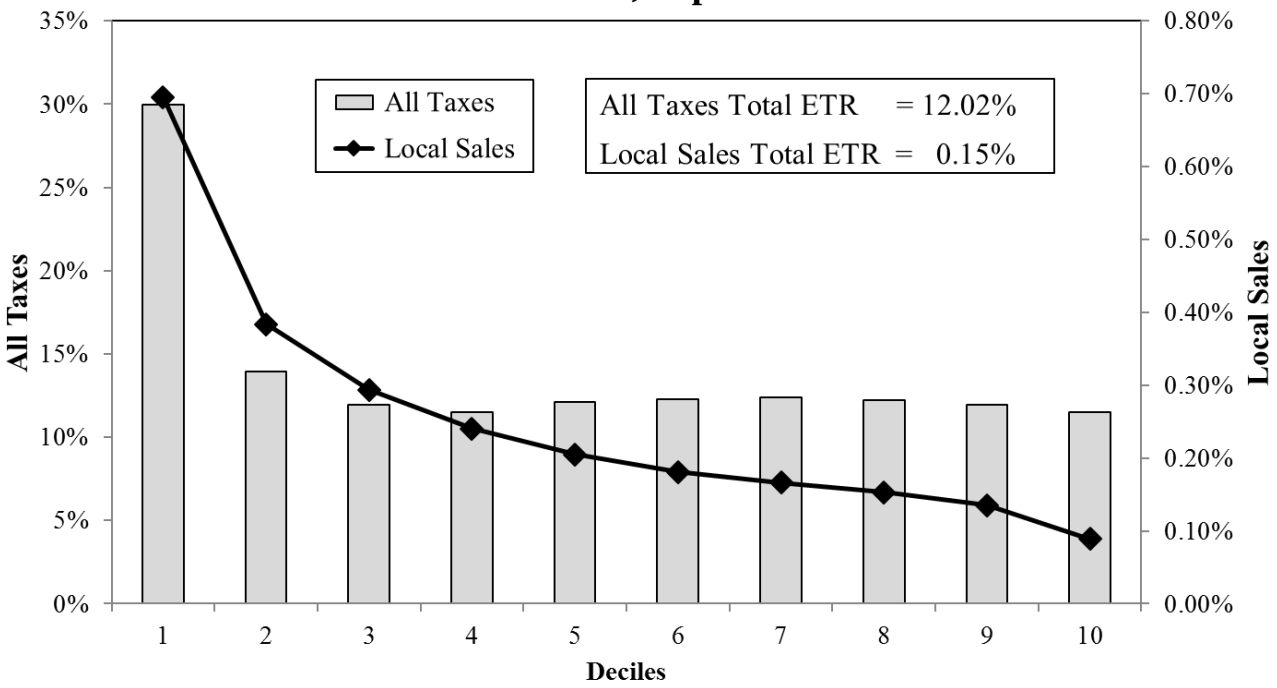
2014 Incidence Estimate for
Local Sales Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$382	$182	$21	$179	$302	$80

* Shifting allocations: Direct = 66%, Consumers = 31%, Labor = 0%, Capital = 3%

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Local Sales	0.70%	0.38%	0.29%	0.24%	0.21%	0.18%	0.17%	0.15%	0.14%	0.09%	0.12%	0.10%	0.06%	-0.259

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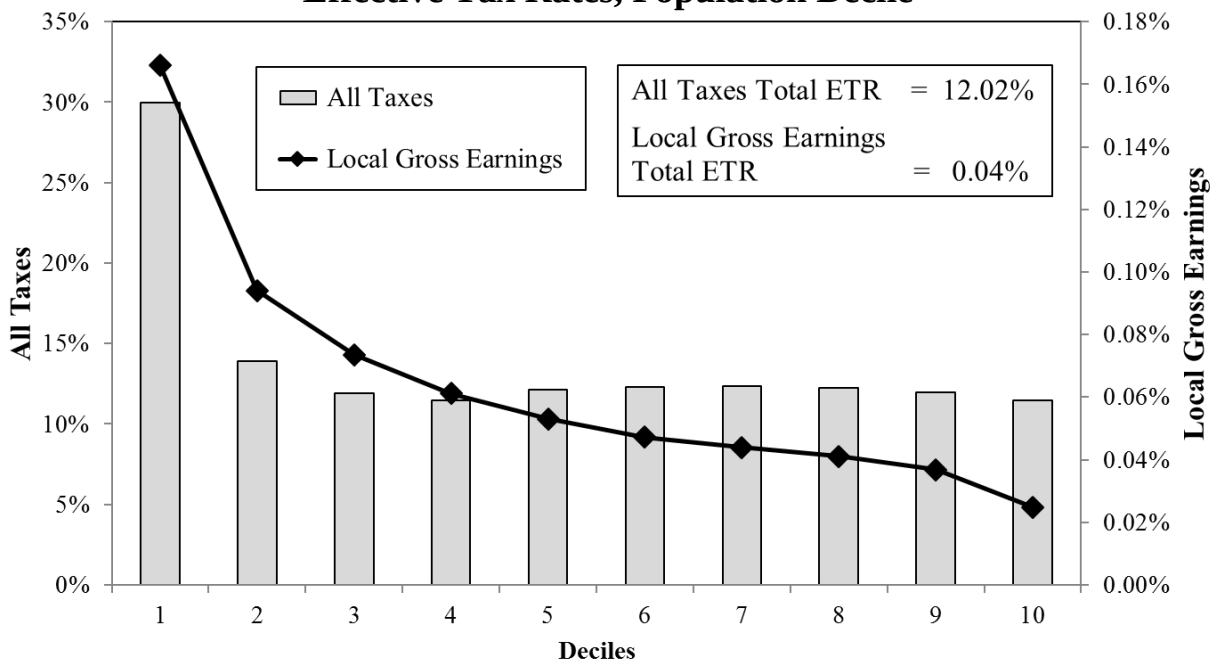
2014 Incidence Estimate for
Local Gross Earning Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$142	$0	$0	$142	$80	$62

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

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Local Gross Earnings	0.17%	0.09%	0.07%	0.06%	0.05%	0.05%	0.04%	0.04%	0.04%	0.02%	0.03%	0.03%	0.02%	-0.237

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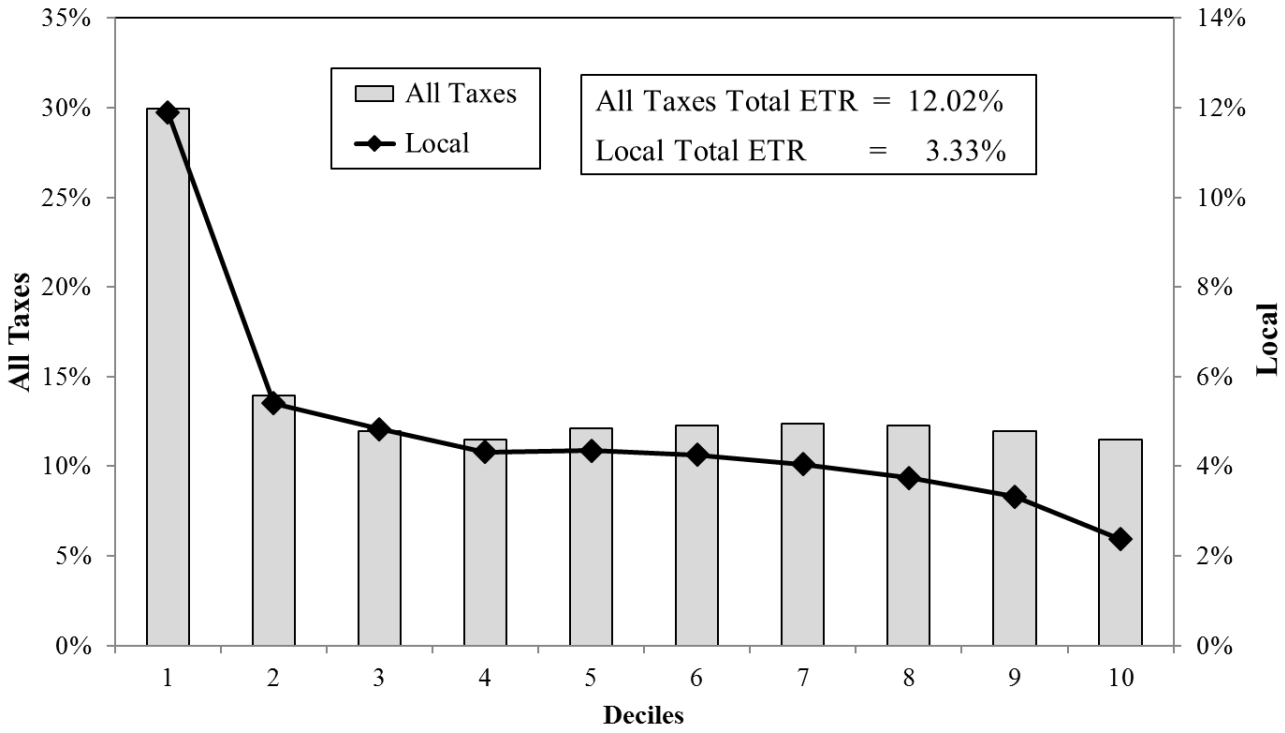
2014 Incidence Estimate for
Total Local Taxes

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$8,416	$3,933	$60	$4,423	$6,940	$1,476

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Local	11.89%	5.40%	4.82%	4.32%	4.35%	4.25%	4.04%	3.74%	3.32%	2.37%	3.46%	2.46%	1.53%	-0.189

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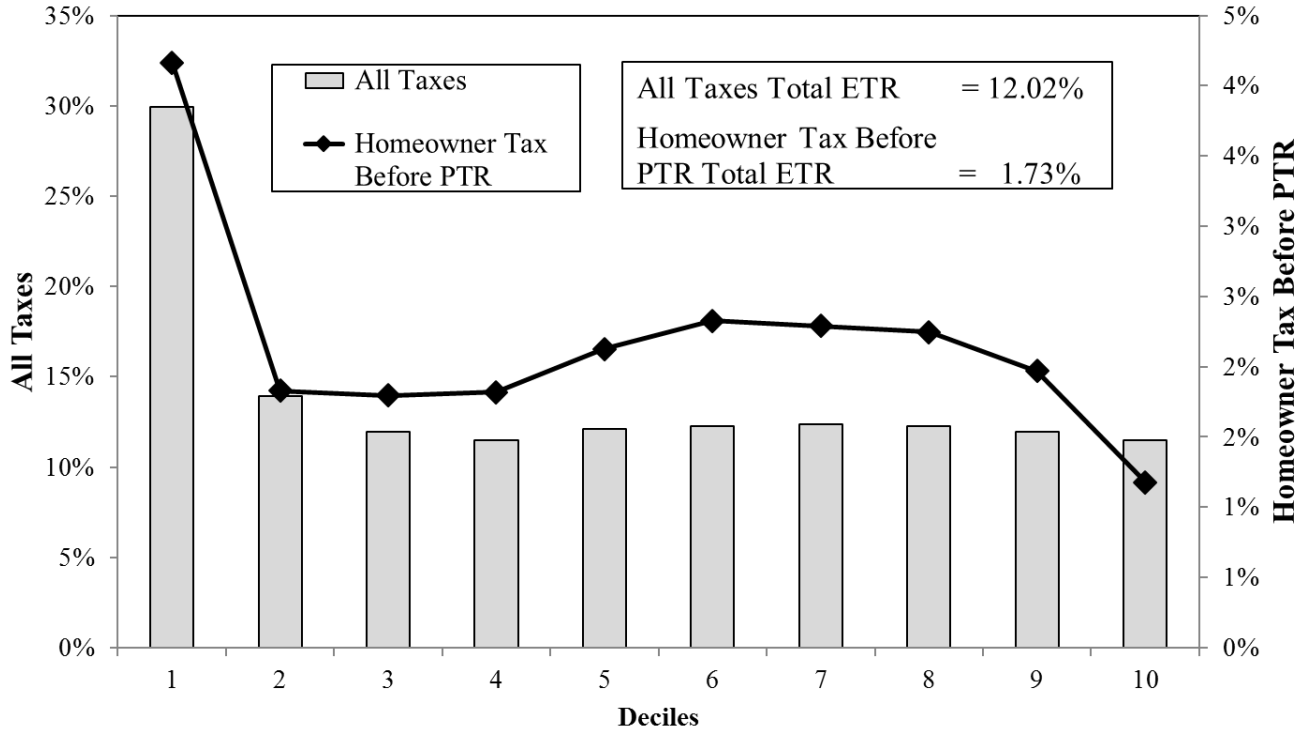
2014 Incidence Estimate for
Homeowner Property Tax Before PTR

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$3,596	$3,596	$0	$0	$3,596	$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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Homeowner Tax Before PTR	4.16%	1.83%	1.80%	1.82%	2.12%	2.33%	2.29%	2.25%	1.97%	1.18%	1.79%	1.39%	0.55%	-0.175

back

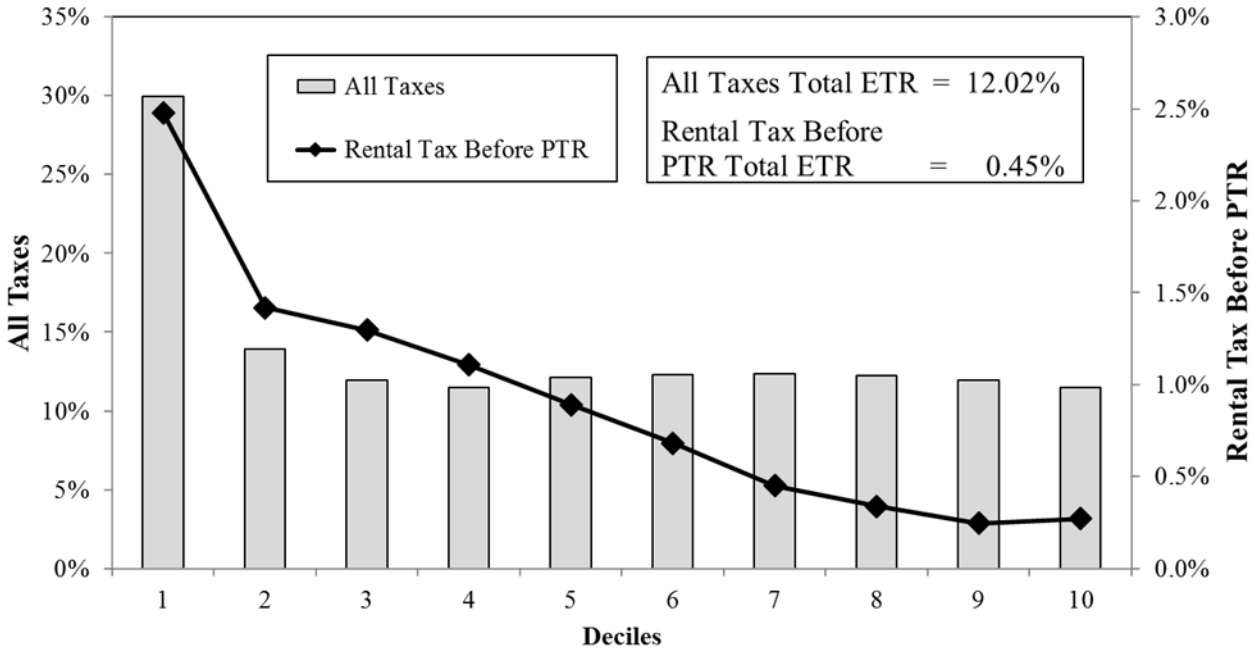
2014 Incidence Estimate for
Rental Property Tax Before PTR

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$1,027	$0	$0	$1,027	$942	$85

* Shifting allocations: Direct = 0%, Consumers = 41%, Labor = 0%, Capital = 59%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Renter Tax Before PTR	2.48%	1.42%	1.30%	1.11%	0.89%	0.68%	0.45%	0.34%	0.25%	0.27%	0.20%	0.23%	0.35%	-0.310

back

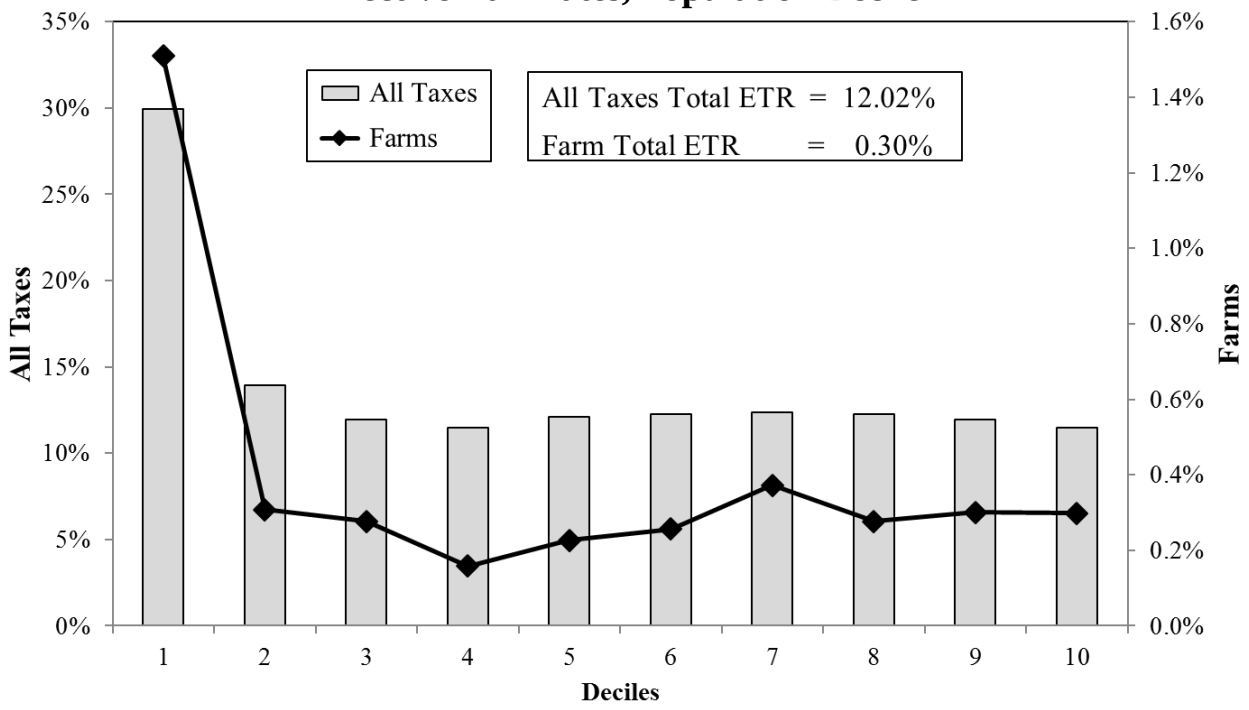
2014 Incidence Estimate for
Farm Property Tax (other than residence)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$629	$0	$0	$629	$626	$2

* 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Farms	1.51%	0.31%	0.28%	0.16%	0.23%	0.26%	0.37%	0.28%	0.30%	0.30%	0.75%	0.20%	0.08%	-0.100

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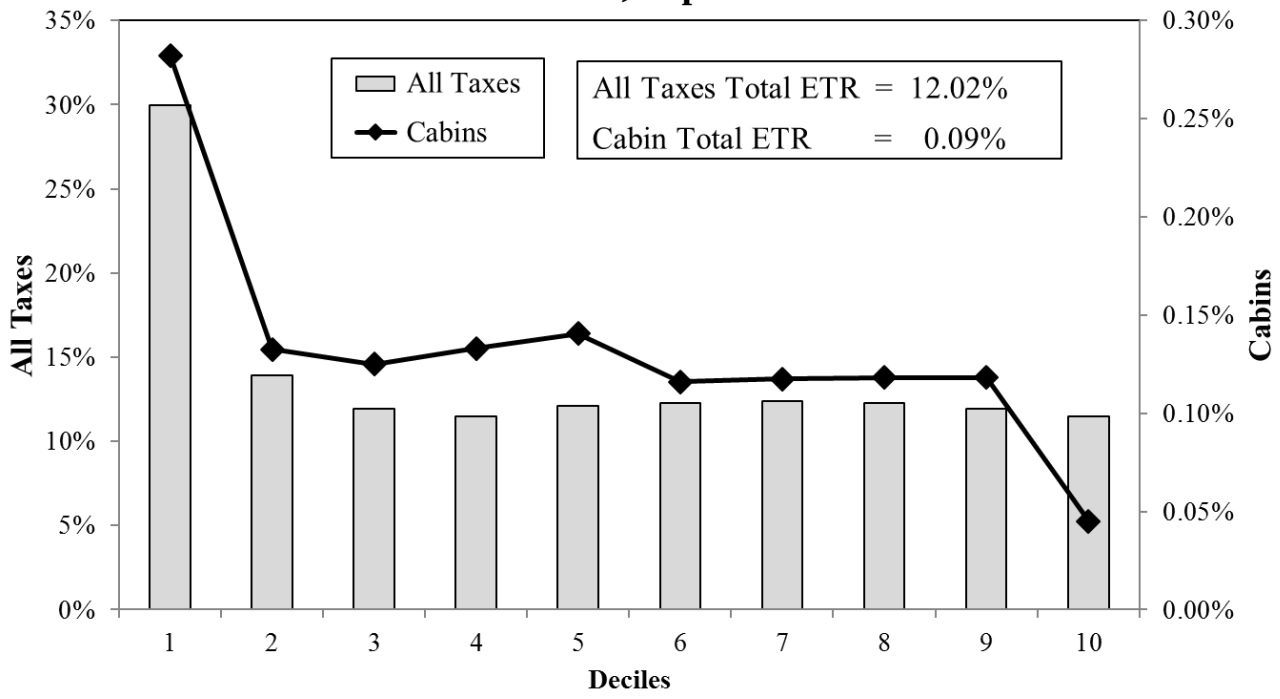
2014 Incidence Estimate for
Residential Recreational Property Tax (State & Local)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$234	$188	$46	$0	$188	$46

* 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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Cabins	0.28%	0.13%	0.12%	0.13%	0.14%	0.12%	0.12%	0.12%	0.12%	0.05%	0.08%	0.05%	0.02%	-0.267

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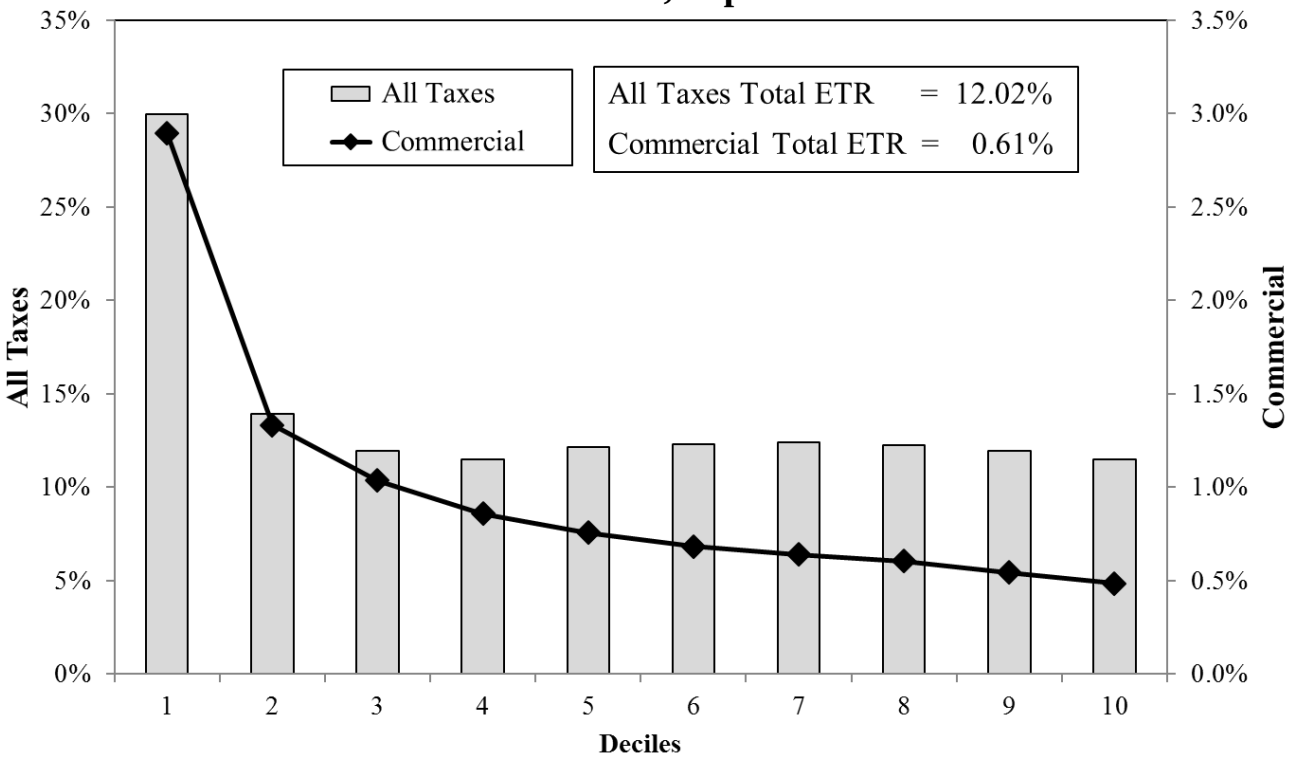
2014 Incidence Estimate for
Commercial Property Tax (State & Local)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$2,152	$0	$0	$2,152	$1,279	$874

* Shifting allocations: Direct = 0%, Consumers = 63%, Labor = 5%, Capital = 32%

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Commercial	2.89%	1.33%	1.03%	0.86%	0.76%	0.68%	0.64%	0.60%	0.54%	0.48%	0.50%	0.48%	0.47%	-0.154

back

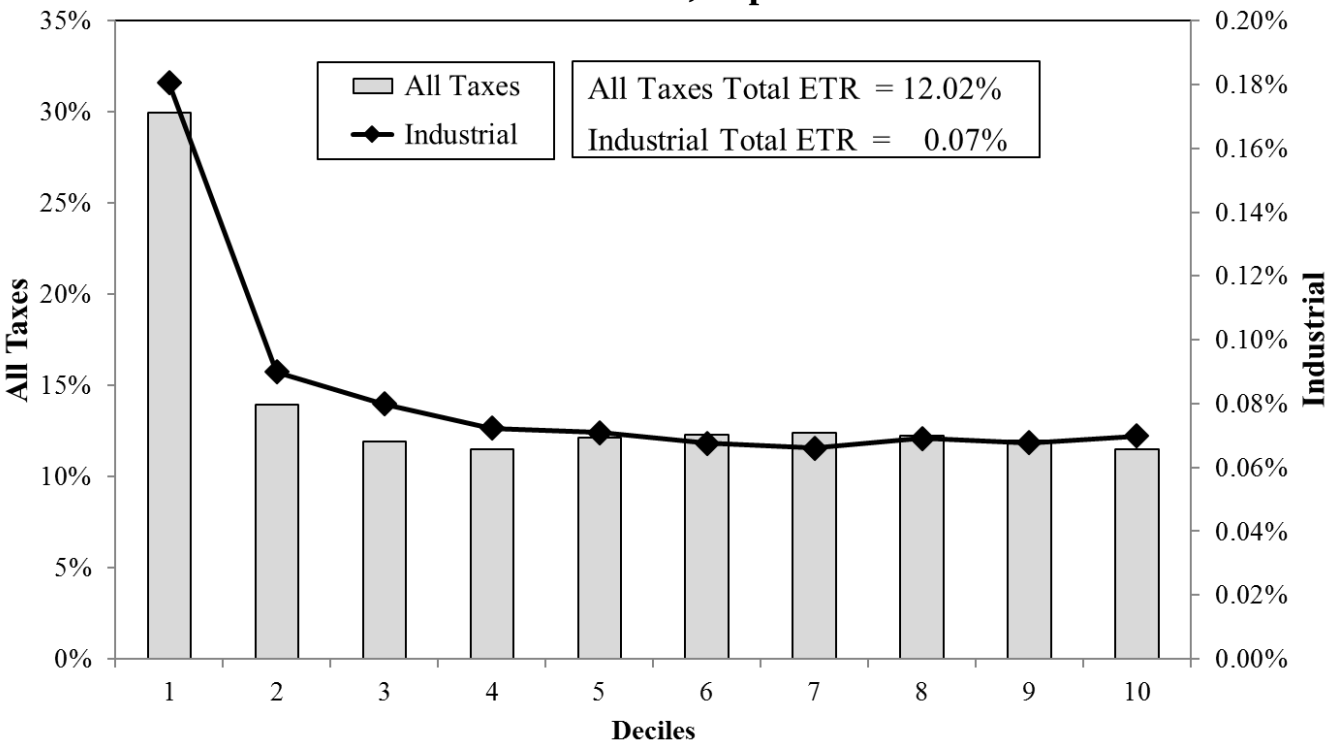
2014 Incidence Estimate for
Industrial Property Tax (State & Local)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$600	$0	$0	$600	$147	$453

* Shifting allocations: Direct = 0%, Consumers = 31%, Labor = 25%, Capital = 44%

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Industrial	0.18%	0.09%	0.08%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	-0.018

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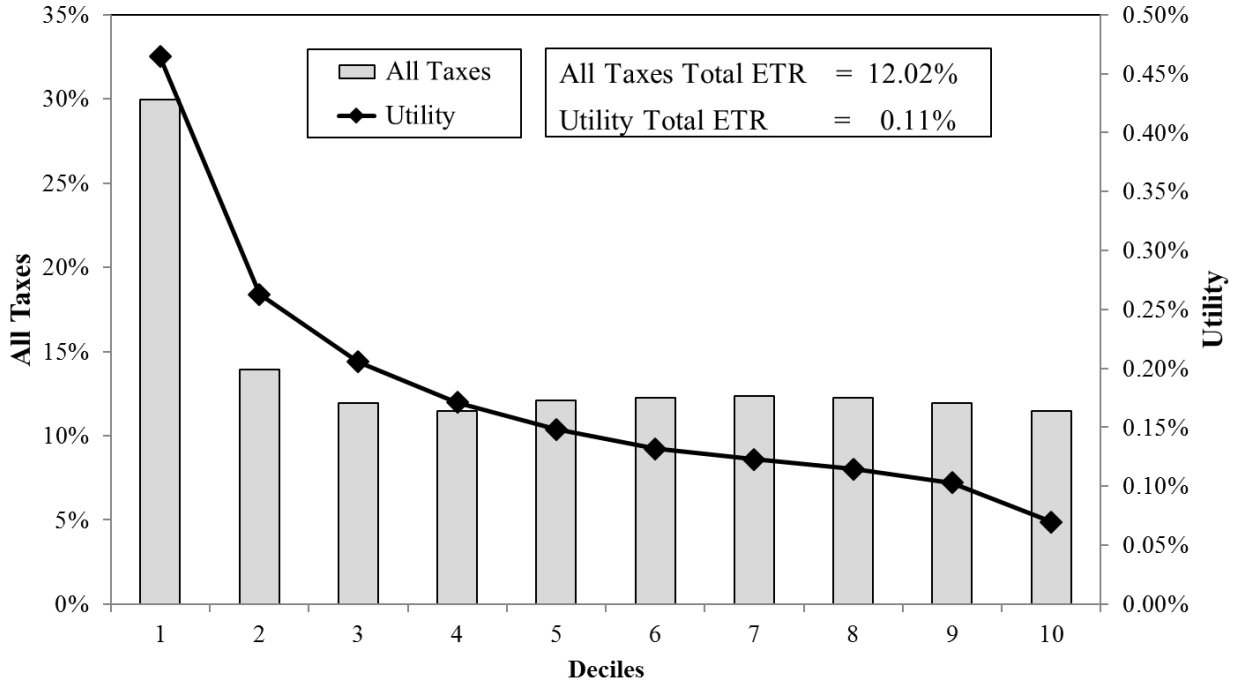
2014 Incidence Estimate for
Utility Property Tax (State & Local)

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
$397	$0	$0	$397	$224	$173

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

Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
Utility	0.46%	0.26%	0.21%	0.17%	0.15%	0.13%	0.12%	0.11%	0.10%	0.07%	0.09%	0.08%	0.05%	-0.237

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2014 Incidence Estimate for
Total State and Local Property

Tax Collection Amounts 2014
($ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
$8,636	$3,784	$46	$4,805	$7,003	$1,633

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	29.95%	13.92%	11.93%	11.49%	12.12%	12.28%	12.38%	12.25%	11.95%	11.48%	11.97%	11.08%	11.52%	-0.029
State & Local Property	11.97%	5.37%	4.81%	4.32%	4.36%	4.26%	4.06%	3.77%	3.35%	2.14%	3.49%	2.50%	1.59%	-0.184

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Glossary of Tax Incidence Study Terms

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

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

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

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

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

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

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

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

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

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

Suits index – a numerical score ranging between –1 and +1 that indicates the extent to which a tax is progressive or regressive. Negative values indicate a regressive tax, positive values a progressive tax, and zero shows a proportional tax. The closer the Suits index is to +1 or –1, the higher the degree of progressivity or regressivity. Suits indexes can be calculated based on totals for 10 deciles (a "10-point" Suits index) or based on the full sample. Except where noted, all Suits indexes reported in this report are "full-sample" Suits indexes.

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

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Legislative Mandate

270C.13 Tax Incidence Reports

Subdivision 1. **Biennial report.** The commissioner of revenue shall report to the legislature by March 1 of each odd-numbered year on the overall incidence of the income tax, sales and excise taxes, and property tax. The report shall present information on the distribution of the tax burden as follows: (1) for the overall income distribution, using a systemwide incidence measure such as the Suits index or other appropriate measures of equality and inequality; (2) by income classes, including at a minimum deciles of the income distribution; and (3) by other appropriate taxpayer characteristics.

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

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

History: 1990 c 604 art 10 s 9, 2005 c 151 art 1 s 15; 1Sp2011 c 7 art 10 s 1; 2013 c 3 s 2