Wisconsin Tax Incidence Study

Wisconsin Department of Revenue

Division of Research and Policy

December 16, 2004

State of Wisconsin • **DEPARTMENT OF REVENUE**

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Jim Doyle
Governor

Michael L. Morgan
Secretary of Revenue

December 16, 2004

The Honorable James Doyle
Governor of Wisconsin
115 East State Capitol
Madison, WI 53702

Dear Governor Doyle:

I am pleased to submit to you the Department of Revenue's 2004 Tax Incidence Study. As part of your "Grow Wisconsin" initiative, you directed the Department to conduct the first tax incidence study in 20 years. The attached study provides a thorough examination of who actually pays state and local taxes in Wisconsin.

The study estimates how the burden of state and local taxes was distributed across Wisconsin households. It includes approximately 88% of all state and local taxes paid in 2001. The study examines the tax burden of each state and local tax as well the tax structure overall. It examines the tax burden of households of different income levels, housing status, age and household structure.

The findings of the study can be used to evaluate the degree to which Wisconsin has a fair, equitable and efficient tax structure. I believe the study will contribute to the policy making process for many years to come.

Sincerely,

Michael L. Morgan
Secretary of Revenue

MLM:

ACKNOWLEDGEMENTS

The 2004 Wisconsin Tax Burden Study was a collective effort by current and former employees of the Department of Revenue with assistance from other Wisconsin state agencies, University of Wisconsin faculty members and a senior associate at the Federal Reserve Bank of Chicago.

Rebecca Boldt, Yeang-Eng Braun, Dennis Collier and James Rissman of the Department of Revenue were primarily responsible for producing this report. Most of the economic analysis and writing of the final document was done by Rebecca Boldt. Yeang-Eng Braun and Dennis Collier provided significant contributions to the development of the methodology and writing of the report. James Rissman was primarily responsible for the development of the data used in the analysis, with valuable contributions from Steve Drake. Pam Walgren and David Peterson also contributed to the development of the methodology used in the analysis. Eugene Schubert provided support- and advice on many aspects of the study. Audra Brennan and Jason Helgerson also provided valuable editorial comments on the final report.

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CHAPTER I
INTRODUCTION AND SUMMARY

A. INTRODUCTION

This study measures how the burden of Wisconsin state and local taxes was distributed across Wisconsin households in tax year 2001. The study analyzes the distribution of $15.1 billion state and local taxes across 2.4 million Wisconsin households.[1] The taxes include property taxes (42% of the total), individual income taxes (29%), sales tax (25%), corporate income and franchise taxes (3%) and utility taxes (less than 1%).[2] Since few major changes have been made to tax law since 2001, the study reflects Wisconsin's current tax structure.[3]

The last incidence study of Wisconsin taxes was conducted in 1979 for 1974 taxes. Since then, both tax laws and socio-economic conditions have changed dramatically.[4] Thus, a tax incidence study is needed to measure the equity of Wisconsin's current tax system.

Most economists and policy makers agree that taxes should, at least to some extent, be based on taxpayers' ability to pay, as measured by income.[5] A progressive tax structure is one where households with greater income pay a larger share of their income in taxes than poorer households. A regressive structure is one where the opposite occurs, namely poorer households pay a greater share of their income in taxes than higher-income households. A proportional structure has all households paying the same share of income in taxes.

Tax incidence is measured as the reduction in income resulting from the imposition of a tax.[6] The incidence of a tax is distinct from its initial impact. Because the person or business that is legally responsible for paying a tax may be able to shift the tax to others, the initial impact may be different from the final incidence.

In general, taxes that are directly imposed on individuals and households are assumed to fall on the individual or household; the household is unable to shift the tax to others. On the other hand, under certain economic conditions, business owners may be able to pass some or all of business taxes to consumers in the form of higher prices or to workers in the form of lower wages. Similarly, landlords may be able to shift some or all of the property taxes on rental property to tenants by raising rents. Business taxes that cannot be shifted to others are absorbed by business owners in the form of lower dividends, profits or return on investment.

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[1] Chapter III describes the definition of households. For purposes of the study, individuals' tax-filing status, rather than actual living arrangements determine a household.

[2] The taxes included in the study represent 88% of all state and local taxes collected in 2001. The motor fuels tax, cigarette and other excise taxes, the estate tax, and the insurance premium tax are not included in the analysis.

[3] Changes in tax law since 2001 are described in Chapter II.

[4] See Appendix 1 for a discussion of the differences between the 1979 and 2004 studies. Due to definitional differences, comparisons between the 1979 findings and the current study are limited.

[5] An alternative perspective argues that certain taxes should be viewed as the cost of public services. Viewed in this way, taxpayers choose their level of taxation in relation to their preferred bundle of public services e.g., school spending, and police protection. From this perspective, the tax burden should be measured not with respect to ability to pay but with respect to the efficiency with which the public services are provided. See Carroll & Yinger (1994), Youngman (2002), Zodrow (2001).

[6] The study measures only the incidence of taxes. A comprehensive analysis of the costs and benefits of government would measure the distribution of government goods and services as well as the distribution of taxes.

The study employs three sets of shifting assumptions to estimate the extent to which business owners and landlords were able to shift taxes to consumers, workers or tenants. The three variants are designed to capture the **full range** of shifting possibilities.

At one extreme, the 'regressive' variant assumes that all business taxes were shifted to either consumers or workers. Some of the taxes shifted to consumers were borne by non-resident consumers, i.e., tourists or non-resident consumers of Wisconsin goods shipped out of state. Taxes that are exported to non-residents are ignored in the analysis. The regressive variant also assumes that landlords were able to shift all the property taxes on rental housing to tenants by raising rents.

At the other extreme, the 'progressive' variant assumes no shifting of business taxes; the entire business tax burden is borne by business owners. However, since some owners of Wisconsin businesses were non-residents, some of the tax was exported to non-resident owners and thus excluded from the study.[7] Under the progressive variant, landlords bore the entire property tax burden on rental housing.

In between these two extremes, the 'plausible' variant, makes shifting assumptions that fall between the 'regressive' and 'progressive' variants. The plausible assumptions are derived using a highly detailed methodology similar to that developed by the Minnesota Department of Revenue in its tax incidence studies. For each tax, the methodology establishes the extent of business tax shifting based on a comparison of state and local tax rates to national tax rates.[8]

To compare the tax burden of one set of the population to another, e.g., the burden of the poorest 10% of households relative to the 10% of households with the highest income, it is necessary to measure the tax burden as a percentage of household income as shown below:

$$\boxed{\text{Tax Incidence} = \frac{\text{Tax Burden}_i}{\text{Household Income}_i}}$$

Thus, the task of a tax incidence study is to estimate: (1) the numerator – the tax burden for a particular household i or group of households; and (2) the denominator – household income for that household or group. Tax burden refers to the tax that is actually paid by the household, including those taxes that are shifted to it, i.e., taxes paid by the household in the form of higher prices for goods consumed or in the form of lower wages paid to wage earners in the household. Household income is the income from which taxes are paid.

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[7] Wisconsin households are assumed to own between 2% and 5% of corporate businesses; on the other hand, Wisconsin households are assumed to own almost all of non-corporate businesses.

[8] The analysis relies on data from the U.S. Bureau of Economic Analysis, U.S. Bureau of the Census, U.S. Economic Census data by business sector, Wisconsin Department of Revenue and other sources. Chapter III and Appendix 4 describe the methodology used in this approach.

Thus, it is the household's pre-tax income and includes all income sources, both taxable and non-taxable.[9] The ratio of tax burden to income determines the effective tax rate facing a particular household or group.

The next section summarizes the findings of the study. The **vertical equity** of Wisconsin's tax system considers the extent to which households with higher income paid a larger share of their income in taxes than poorer households. **Horizontal equity** considers whether households with similar income faced the same tax burden.

The taxes included in the study are detailed in Chapter II. The definitions and methodology used in the analysis are described in Chapter III. Chapter IV describes the characteristics and income sources of Wisconsin households. Chapters V and VI describe the distribution of taxes across Wisconsin households. Chapter VII summarizes the findings and identifies areas for future research.

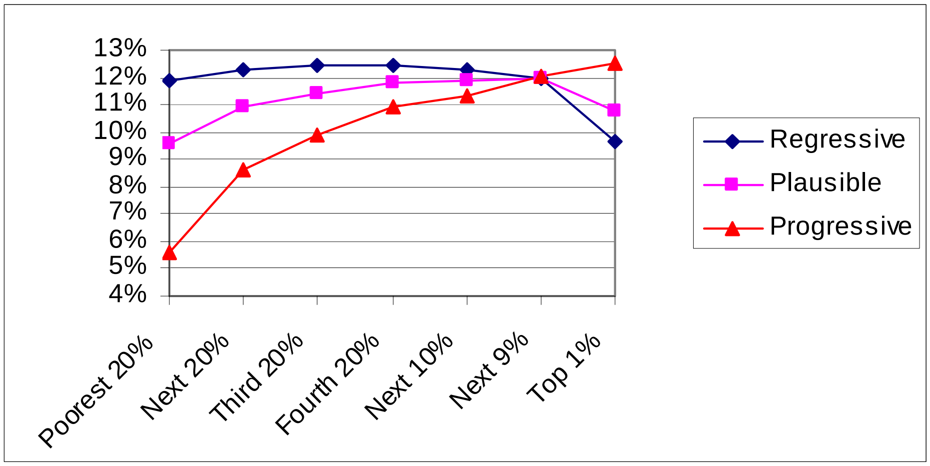
B. SUMMARY OF FINDINGS

1. Vertical Equity

a. Total State and Local Taxes Appear to Be Proportional to Slightly Progressive, Regardless of Shifting Assumption

Chart I.1 reports the effective tax rates for all state and local taxes by household group under the three variants. The tax rates reported for each variant represent the share of household income that was spent on total state and local taxes for each household group. The incidence of taxes directly imposed on individuals does not change under the variants. These taxes include the individual income tax, sales taxes on consumer purchases, and property taxes on owner-occupied residential

CHART I.1
EFFECTIVE WISCONSIN TOTAL STATE AND LOCAL TAX RATES
UNDER THREE INCIDENCE VARIANTS, 2001



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[9] Taxable income includes wages, dividends, interest, sole proprietor and farm income, and taxable social security income and pensions. Non-taxable income includes non-taxable social security benefits, non-taxable pensions, non-taxable interest, welfare benefits, and employee contributions to deferred retirement accounts.

property and utility taxes on residential use. The three variants differ by the assumptions used to determine the shifting of business taxes and property taxes on rental housing.

By design, the regressive and progressive variants produced the outer bounds for the results. Under all variants, total state and local taxes were progressive to proportional for 90% of households. However, the variants differ with regard to the 10% of households with the highest income. Under the regressive variant, taxes were regressive for these households, with the top 1% of households paying a smaller share of their income in taxes than even the poorest households. Under the plausible variant, taxes were progressive to proportional for 99% of households but regressive for the top 1%. Taxes were progressive for all households under the progressive variant.

For 90% of households, the tax burden was highest under the regressive variant and lowest under the progressive variant. This reflects the higher degree of shifting of taxes to non-residents under the progressive variant relative to the other variants.

While there are differences across the variants with regard to the levels and distribution of taxes, these differences do not markedly affect the overall conclusions that can be drawn from the study. Specific conclusions regarding the incidence of Wisconsin's taxes may best be drawn from the plausible variant since it represents the most realistic set of assumptions and reflects aspects of both the regressive and progressive variants. The findings described below are based on the plausible set of assumptions.

The overall Wisconsin tax structure was mildly progressive across all households, except at the highest income level. The poorest 20%, i.e., households with income below $15,600, paid 9.6% of income in taxes. The effective tax rates increased slightly for the middle 79% of households, ranging from 10.9% to 11.9%. These middle-income households had income between $15,601 and $254,200. However, taxes were regressive for the top 1% of households. These households had income greater than $254,200 and paid 10.8% of their income in taxes.[10]

Table I.1 reports the average tax burden of each household group and the breakdown of the total burden by tax type under the plausible variant. The property tax accounted for the largest burden for 90% of households. For poorer households, the second largest tax was the sales tax. The tax burden of households with higher income was mainly from income and property taxes.

[10] These findings are supported by the calculation of the overall progressivity of the tax structure using the Kakwani index of progressivity, which is described in Chapter 5. The Kakwani index indicated a relatively proportional tax structure under all thee variants.

TABLE I.1
WISCONSIN STATE AND LOCAL TAX BURDEN BY HOUSEHOLD GROUP, 2001

Household Group	Average Income ($)	Average Tax Burden	Share of Total Taxes in:		
			Income Tax[1] (%)	Sales Tax (%)	Property Tax[2] (%)
Poorest 20%	$9,509	$882	-1%	41%	58%
2nd 20%	21,619	2,318	15	33	51
3rd 20%	35,468	4,039	26	29	44
4th 20%	55,709	6,567	32	27	41
Next 10%	79,864	9,484	36	25	38
Next 9%	129,473	15,458	39	21	38
Top 1%	$574,908	$62,104	49%	14%	36%

[1]Income tax after the earned income tax credit.
[2]Property tax after the homestead, farmland preservation and farmland tax relief credits.

b. The Progressivity of the Individual Income Tax Offsets the Regressivity of Other Taxes

With respect to specific taxes, the individual income tax was the most progressive tax in the Wisconsin tax system. The progressivity of the income tax was due to the sliding scale standard deduction and the graduated rate structure, as well as to the earned income tax credit that is provided to low-income households. The earned income tax credit had the effect of providing refunds equal to about 1% of household income for the poorest 20% of households. The effective income tax rates increased for all households, with the top 1% paying 5.4% of their income in income taxes.

c. Sales, Utility and Property Taxes Were Regressive Across All Households

Sales taxes were regressive, with the poorest 20% paying 4.3% of income on sales taxes, while the highest-income households paid 1.6%. Utility taxes were also regressive; however, the share of income spent on utility taxes was very small, i.e., less than 0.24% for all households.

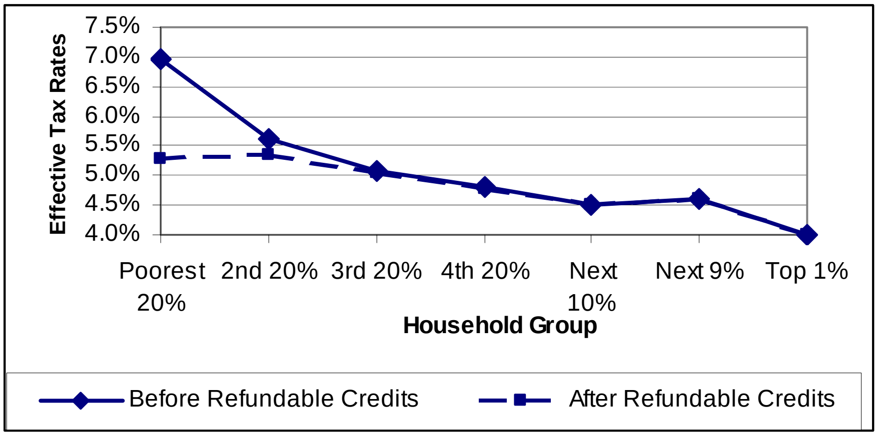
Property taxes were regressive across all household groups. Overall, households paid 4.7% of their income in property taxes, with most of this due to taxes on residential housing. The plausible variant assumes that landlords were able to shift about half of the property taxes imposed on their rental property to tenants through higher rents. Under this variant, the poorest 20% of households paid 5.3% of their income in property taxes. In contrast, the highest-income households spent an average of 4% of their income on property taxes.

d. The Homestead Credit Significantly Decreased the Regressivity of the Property Tax but Appears to Be Underutilized

Refundable income tax credits, including the homestead credit, farmland preservation credit and farmland tax relief credit, significantly reduced the regressivity of the property tax for the poorest 40% of households. Chart I.2 shows the property tax incidence before and after these credits.

The chart shows that the tax burden fell from 7% of total income for the poorest households before the credits to 5.3% after the credits.

CHART I.2
PROPERTY TAX INCIDENCE, PLAUSIBLE VARIANT, BEFORE AND AFTER REFUNDABLE PROPERTY TAX CREDITS



While refundable credits significantly reduced the burden of the poorest households, they did not completely eliminate the regressivity of the property tax. The limited effect of these credits relates to several factors. First, it appears that many qualifying households did not apply for the homestead credit. The data suggest that as few as 43% of qualifying households actually received the credit in 2001. Second, the homestead credit does not provide significant property tax relief for many households that appear to be "income poor but house rich". These households may be residing in a home, the value of which does not correspond to their current income levels. A widow whose income is a modest social security payment living in the long-time family home is an example of such a household. While she may qualify for and receive the homestead credit due to her low income, her property taxes may far exceed the taxes that are offset by the credit.

e. *Business Taxes Had a Minor Effect on the Overall Tax Incidence*

Taxes directly imposed on businesses include the corporate income and franchise tax, sales taxes on business purchases, property tax on (non-rental) business property and utility taxes on utilities for business use. These taxes accounted for 18.3% of all state and local taxes. The incidence of these business taxes were included in the incidence of the various tax types discussed above. However, if one were to measure the incidence of business taxes as a group, the incidence of these taxes combined was relatively proportional overall. Due to the small level of business taxation and the distribution of these taxes, the study finds that business taxes played a minor role in the overall tax incidence.

f. *Federal Tax Policy Lowered Total State and Local Tax Burden but Also Had a Regressive Influence*

Federal law allows an itemized deduction for state income and property taxes. The federal offset reduced the state tax burden by approximately $1 billion for those Wisconsin taxpayers who itemized their federal income tax deductions; however, it had a regressive influence on the overall Wisconsin tax structure.[11]

Before the federal offset, the Wisconsin state and local tax structure was slightly progressive overall. After the federal offset, the overall structure can best be described as proportional.

2. Horizontal Equity

Horizontal equity compares the tax burden of identical households. The study does not compare the burdens across identical households insofar as attributes such as size, sources of income and location are not the same across households. However, data do allow a comparison across different household groups with similar income. In particular, the study compares the tax incidence between renters and homeowners, elderly and non-elderly and households of different composition.

a. The Tax Structure Appears to Be More Progressive for Renters

The overall tax burden was more progressive for renters than for homeowners. This was driven, in large part, by the lower residential property tax burdens of renters relative to homeowners. The residential property tax was regressive for both renters and homeowners; however, it was far more regressive for property owners. Even after the homestead credit, the poorest homeowners paid a much larger share of their income to taxes than renters of similar means. Overall, the total tax burden of renters was offset to a larger extent by the homestead credit and earned income tax credit than for homeowners. One explanation for this may be due to "house rich, income poor" households described earlier. To the extent that homeowners are less mobile than renters, the limited effect of the homestead credit on high property taxes may be more characteristic for homeowners than for renters.

b. The Tax Incidence for Non-Elderly Households Was the Same as for Elderly Households

Non-elderly households, i.e., where the head of household is under 65 years old, made up 76% of the households; their share of taxes was almost the same as their share of income, each around 83%. Elderly households comprised less than a quarter of all households; their income and tax shares were also very similar, each around 17% of the total.

Little difference was found between the overall tax burden of elderly and non-elderly households at similar income levels. However, the property tax burden was higher for elderly households than for non-elderly households at almost all income levels. On the other hand, the individual income and sales tax burdens were lower for elderly households compared to non-elderly households of similar means.

c. The Overall Tax Structure Was the Most Progressive for Single Heads of Households and Least Progressive for Married Couples Without Children

Horizontal equity was also measured across different household types. The tax burden was compared for households made up of single people without children, single people with children, and married households with and without children.

[11] The regressivity of the federal offset is dampened by inclusion of the federal earned income tax credit, which is targeted to low-income households.

The tax burdens of households with income greater than $27,900 were roughly comparable, regardless of household composition. However, for poorer households, the tax burdens differed significantly depending on marital status and the presence of children.

Among the poorest households, married households paid a higher share of their income in taxes than single households of similar means, regardless of the presence of children. This was particularly the case for married households with children as compared to single heads of household with children. This difference is largely attributable to the property tax burden. Poor married households faced a higher property tax burden than single households, whether or not the households were homeowners or renters.

Poor married homeowners with children, in particular, paid a large share of their income in property taxes. The higher property tax burden for married households may relate to household size. Poor married homeowners had, on average, two more people in the household (one additional adult and one additional child) than heads of household who owned their homes. This suggests that the larger property tax burden of poor married households may result from greater housing needs.

Among poor single households, the households without children paid a higher share of their income in taxes than did households with children. Similarly, among poor married households, households without children faced a higher tax burden relative to the burden of households with children. The lower tax burden of households with children can be attributed to the larger number of personal exemptions as well as the earned income tax credit available to households with children.

3. Conclusions

In conclusion, the overall tax structure in 2001 was mildly progressive across households. On their own, state and local taxes achieved a modest degree of vertical equity, in large part due to the homestead and earned income tax credits. However, in a larger context that recognizes the effect of federal tax policy on the net tax burden of state and local taxes, the overall structure was a proportional tax system. Given the proportional distribution of taxes, it is not surprising that the tax structure had little effect on the after-tax income distribution.

Horizontal inequities were identified for households of different home ownership status and composition. On the other hand, horizontal equity was achieved between elderly and non-elderly households.

The purpose of the study is to measure the distribution of taxes across Wisconsin households. The study does not seek to make policy recommendations. However, it is hoped that the findings of the study will be used to inform the policy making process in years to come.

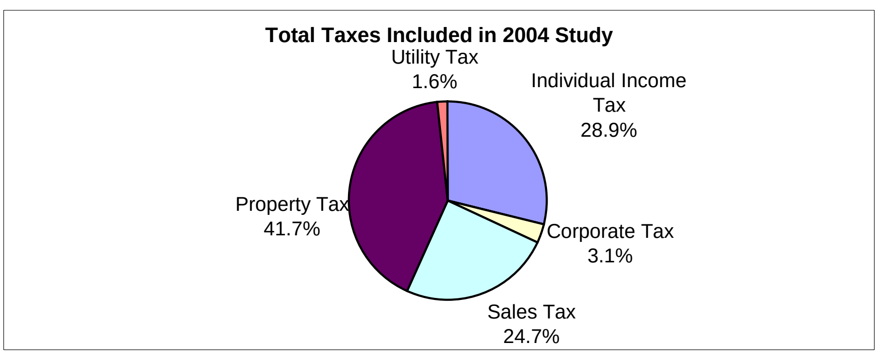
CHAPTER II
WISCONSIN'S TAX STRUCTURE

The taxes included in the current study are the individual income tax, corporate income/franchise tax, state and local sales tax, the local property tax and the utility tax. Overall, these taxes represent 92.3% of total 2001 state and local taxes collected. After making certain adjustments, (e.g., excluding part-year residents), the taxes analyzed in the study represent 88% of total state and local taxes collected in 2001.[1]

Table II.1 reports the breakdown of the tax collections included in the study.

TABLE II.1
2001 TAXES INCLUDED IN TAX INCIDENCE STUDY

	2001 Collections ($ millions)	Comments
Individual Income Tax[1]	$4,371	Excludes part year residents, married filing separately and dependent filers
Corporate Tax	472	C-corps only
Sales Tax	3,742	Excludes use/sales tax paid by governments and premier resort & baseball and football stadium taxes
Property Tax[2]	6,313	Excludes swamp and waste and forestland
Utility Tax	235	Excludes airlines, railroads and utilities paid by public entities
Total Taxes included in Study	$15,133	
Total 2001 State and Local Taxes	$17,152	
% of Taxes in Study to Total	88%	



[1]Net of the refundable earned income tax credit.
[2]Net of the refundable homestead, farmland preservation and farmland tax relief credits.

The three major taxes are the state individual income tax, state and county sales tax and the local property tax. The individual income tax and sales tax each made up roughly one quarter of total taxes. The property tax accounted for 42% of the total. Corporate taxes accounted for 3% of the total and utility taxes made up 2% of the total.

The sections below describe the 2001 taxes. Changes to tax law that have occurred since 2001 include the following: (1) a utility tax exemption for hub airlines (2001), resulting in an annual tax decrease of approximately $3 million in utility taxes; (2) adoption of federal law changes

[1] The motor fuels tax, the estate tax, the insurance premium tax and excise taxes are not included. See Chapter IV for a discussion of households that are excluded from the analysis.

relating to pensions, deferred compensation plans, IRAs and educational assistance plans (2002) that will result in an annual decrease in income tax revenues of approximately $30 million; (3) a dairy investment credit, expected to reduce income tax revenue approximately $6 million, effective in tax year 2004 through 2009; and (4) four additional counties have imposed a 0.5% county sales tax.

Prospective law changes include: (1) single sales factor apportionment for corporate income and franchise tax purposes to be phased in beginning in 2006; and (2) a sales tax exemption for fuel and electricity used in manufacturing, replacing an income and franchise tax credit, effective in 2006. Once fully in place, these provisions will reduce business taxes by an estimated $58 million annually.

To the extent that these changes do not significantly change the tax structure, the study reflects Wisconsin's current tax structure.

A. INDIVIDUAL INCOME TAX

The individual income tax accounted for 29% of all state and local taxes in 2001. The income tax rates ranged from 4.6% to 6.75% on a tax base that conforms closely to the base for the federal individual income tax. Wisconsin Adjusted Gross Income is defined as the Federal Adjusted Gross Income after certain additions and subtractions. The additions include income that is taxable under state law but exempt under federal law, e.g., state and local government interest.[2] The subtractions remove income that is exempt under state law but taxable under federal law. A standard deduction and personal exemptions are subtracted from the Wisconsin adjusted gross income to determine taxable income.

The standard deduction is a sliding scale deduction that allows a maximum deduction for incomes below a threshold level and phases to zero as income rises above the threshold. Table II.2 reports the maximum deductions allowed by filing status and the incomes over which the deductions are phased out. Thus, single tax filers received the maximum $7,440 deduction for incomes below $10,730; the standard deduction phases down to $0 as income increases from $10,730 to $72,730. Income equal to $72,730 and above received no deduction.

TABLE II.2
WISCONSIN STANDARD DEDUCTIONS, TAX YEAR 2001

Filing Status	Maximum Deduction	Phase-Out Range	Phase-Out Rate
Single	$7,440	$10,730 - $72,730	12%
Head of Household	$9,620	$10,730 - $31,460*	22.515%
Married Filing Jointly	$13,410	$15,070 - $82,872	19.778%
Married Filing Separately	$6,370	$ 7,160 - $39,367	19.778%

* Income at which the head of household deduction equals the deduction for single filers. Above this income level, the deduction for heads of households is the same as for single filers.

Wisconsin adjusted gross income is also reduced by personal exemptions equal to $700 for each tax filer, spouse and dependent. There is an additional $250 exemption allowed for each tax filer and spouse aged 65 or older.

[2] See Wisconsin Income Tax, http://www.dor.state.wi.us/ra/inctax02.pdf for a description of the Wisconsin individual income tax.

Tax rates are applied to Wisconsin taxable income to yield the gross tax liability. Wisconsin's tax rates are graduated, ranging from 4.6% to 6.75%. Table II.3 reports the rates and income brackets for 2001 taxes. The top rate applies to those with income exceeding $117,300 for single filers and $155,100 for married joint filers.[3]

TABLE II.3
WISCONSIN INDIVIDUAL INCOME TAX RATES AND BRACKETS,
TAX YEAR 2001

	Taxable Income Brackets		
Tax Rate	Single	Married - Joint	Married Filing Separately
4.60%	$0 - $8,060	$0 - $10,750	$0 - $5,380
6.15%	$8,061 - $17,130	$10,751 - $21,500	$5,381 - $10,750
6.50%	$17,131 - $117,300	$21,501 - $155,100	$10,751 - $77,550
6.75%	More than $117,300	More than $155,100	More than $77,550

The gross tax is progressive due to both the graduated tax rates and the standard deduction, which provides greater tax benefits to lower-income persons because it phases out as income rises. Consider, for example, two married households with no children. Household A has a Wisconsin taxable income of $40,000, while Household B has a Wisconsin taxable income equal to $80,000. Table II.4 shows the gross tax rate without the standard deduction and the rate with it.

TABLE II.4
EFFECT OF STANDARD DEDUCTION
ON INCOME TAX RATES

Tax Rates Without a Standard Deduction			
		Household A	Household B
WI Income	(1)	$40,000	$80,000
Deduction for Exemptions	(2)	1,400	1,400
Taxable Income	(3) = (1)-(2)	38,600	78,600
Tax	(4)	$2,270	$4,870
Tax rate w/o deduction	(5) = (4)/(1)	5.7%	6.1%
Tax Rates With a Standard Deduction			
		Household A	Household B
WI Income	(6) = (1)	$40,000	$80,000
Deduction for exemptions	(7) = (2)	1,400	1,400
Standard Deduction	(8)	8,331	519
Taxable Income	(9) = (6)-(7)-(8)	30,269	78,081
Tax	(10)	$1,724	$4,831
Tax rate w/deduction	(11) = (10)/(6)	4.3%	6.0%

If there was no standard deduction, Household A would pay $2,270 in gross taxes, equal to 5.7% of its income ($2,270/$40,000), and Household B would pay $4,870, or 6.1% of its income in gross taxes. Thus, the tax would be roughly proportional to the extent that both households pay roughly the same share of their income in taxes.

The standard deduction reduces the taxable income and therefore the tax of both households; however, due to its sliding scale, Household A's income is reduced by a larger

[3] The tax brackets are indexed for inflation.

percent. Household A would now pay $1,724, or 4.3% ($1,724/$40,000) of its income in gross taxes, while Household B would pay $4,831, or 6.0% of its income in taxes. Thus, the standard deduction enhances the progressivity of the tax structure.

Gross taxes are reduced by nonrefundable credits to produce the income tax liability. These credits are nonrefundable to the extent that they cannot reduce the total tax liability less than $0. In addition to nonrefundable credits, there are several refundable credits provided to particular types of claimants. These include the homestead credit, the earned income tax credit, and the farmland preservation credit, and the farmland tax relief credit.

Except for the farmland tax relief credit, these credits provide direct tax relief through a circuit-breaker mechanism. The underlying principle of a circuit breaker is that taxes exceeding a certain percentage of a taxpayer's income are considered excessive and are offset at least in part with state-funded assistance.

The homestead credit is designed to provide tax relief for property taxes that are excessive in relation to income; the credit is based on property taxes or its rent equivalent and household income. The credit is available to households with income less than $24,500.[4] The credit offsets 80% of "excessive" property taxes up to $1,450 in property taxes. Thus, the maximum homestead credit is $1,160 ($1,450 x 80%).

The earned income tax credit (EIC) is designed to provide tax relief to low-income earners for excess income taxes. It is calculated as a percentage of the federal earned income tax credit depending on family size.[5] The state EIC is equal to 4% of the federal credit for claimants with one child, 14% for two children, and 43% for three or more children. In 2001, the credit phased out at household income equal to $32,121.

The farmland preservation credit is designed to provide property tax relief for owners of farmland. The land must meet certain size and use requirements. The current credit provisions are the same as in 2001. The maximum property tax allowed is $6,000. The maximum credit provided is $4,200. While the credit is based on the interplay between property taxes and income, a 10% minimum credit is available for claimants.

The farmland tax relief credit is a set percentage of up to $10,000 in farmland property taxes. In 2001, the credit percentage was 13% and the maximum credit was $1,300.

B. SALES TAX

The state and local sales and use tax accounted for $3.9 billion, or 23% of all state and local taxes. Wisconsin imposes a 5% tax on the gross receipts from retail sales or use of most tangible personal property as well as certain services. The sales tax is collected by the retailer and remitted to the state. The use tax is imposed directly on the consumer for out-of-state purchases that would be taxable if it were purchased in the state. The state sales/use tax yielded $3.7 billion in FY2002.

Sales of tangible personal property are taxable unless specifically exempt. Exemptions include food, prescription drugs, and motor fuel. Services, on the other hand, are considered exempt from sales tax unless specifically identified in the statutes.[6] Taxable

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[4] For purposes of the homestead credit, income is defined more broadly than for tax purposes. See Homestead Tax Credit, http://www.dor.state.wi.us/report/h.html for details.

[5] See Earned Income Tax Credit, http://www.dor.state.wi.us/report/e.html for details.

[6] See Wisconsin Sales and UseTax, http://www.dor.state.wi.us/report/s.html for details.

services include temporary lodging, admissions to amusement and athletic places/events, telecommunication and cable television services, dry cleaning, photographic services, repair/service of taxable tangible property, and landscaping services.

Counties may impose a 0.5% local sales and use tax on the same tax base as the state sales tax. In 2001, 54 counties levied a county sales tax. County sales tax collections were $226.3 million in FY2002.

Only state and county sales and use taxes are included in the analysis. Other sales-type taxes such as the professional football and baseball stadium taxes, the local exposition center district tax (in the City of Milwaukee) and the premier resort district tax (in the Cities of Lake Delton and Wisconsin Dells) are not included in the study.

C. PROPERTY TAX

The property tax is the most important tax revenue source for municipal governments and the major source of tax revenue for school districts, vocational technical colleges, special purpose districts and tax incremental finance districts. In addition, the state levies a forestry tax equal to two-tenth of one mill (0.02%), the proceeds of which is paid to the conservation fund.

Taxable property is classified into one of the following groups: residential, commercial, manufacturing, swamp and waste, productive forestland, agricultural or "other". "Other" is defined to mean farm buildings and improvements and the land necessary for their location.[7]

Property is presumed to be taxable unless specifically exempt by statute. Properties owned by federal, state and local governments are exempt. Exemptions are also provided for property owned and used by churches, universities, educational and charitable facilities, non-profit hospitals, and non-profit housing. Personal property exempt from tax includes household personalty, manufacturing machinery and equipment, inventories, computers and waste treatment equipment. Intangible property is also exempt.

The standard of assessment for all taxable property, except agricultural land, is full market value as of January 1 of each year. Agricultural land is assessed based on its “use value” as measured by its income capability in corn production.

The equalized value of property refers to the full market value of property as reflected in arms-length market sales. Taxable property was valued at $312.5 billion in 2001. Table II.5 shows the value by class of property for 2001 tax assessments, payable in 2002.[8] Residential property, which is defined as single-unit dwellings and owner-occupied condominiums and townhouses, accounted for 68.8% of all taxable property. Commercial real property accounted for 17.6% of total value, and manufacturing real property accounted for 3.4%. Farmland and farm buildings accounted for 4.2% of the total value of taxable property.

Wisconsin local property tax collections totaled $6.57 billion in 2001/02 (i.e., levied in 2001 to be collected in 2002). Table II.6 reports the 2001 levies by taxing jurisdiction. The school district levy accounted for 46% of the total local property tax levy, amounting to $3.1 billion

[7] Beginning with 2004 assessments, agricultural forest is an additional classification to be valued for tax purposes at 50% of full value. Also beginning in 2004, swamp and waste is valued at 50% of its full value; however, the study considers tax laws in place in 2001.

[8] Swamp and waste and forestland are not included in the tax incidence analysis.

in 2001. The municipal tax was the next highest levy, amounting to $1.7 billion and accounting for 26% of the total. County taxes accounted for 21% of all local property taxes, while technical colleges accounted for 8% of total local property taxes.

TABLE II.5
2001 EQUALIZED VALUE OF TAXABLE PROPERTY BY CLASS OF PROPERTY

Class of Property	Total ($ billion)	% of Total
Residential	$215.2	68.8%
Commercial	55.0	17.6
Manufacturing	10.6	3.4
Agricultural Land	5.1	1.6
Agricultural "Other"	8.1	2.6
Swamp and Waste	1.3	0.4
Forestland	7.6	2.4
Personal Property	9.7	3.1
Total	$312.5	100%

TABLE II.6
LOCAL PROPERTY TAX LEVIES BY TAXING JURISDICTION, 2001

Taxing Jurisdiction	Amount ($ millions)	% of Total
Municipal	$1,713.4	26%
County	1,420.0	21
School District	3,071.8	46
Technical College	511.6	8
Total	$6,716.8	100%

D. CORPORATE INCOME/FRANCHISE TAX

The tax base for the franchise tax is corporate net income, which is the federal gross income as defined by the Internal Revenue Code, subject to certain modifications.[9] Corporations that conduct business in Wisconsin as well as other states apportion their total net income to Wisconsin based on a formula based on shares of the corporation's property, payroll and sales in Wisconsin to the corporation's total property, payroll and sales. The sales factor is double-weighted, while the property and payroll factors are single-weighted. Beginning in tax year 2006, Wisconsin will begin phasing in an apportionment formula that will eventually be single-weighted by sales.

Corporate tax collections were $471.9 million in tax year 2001, equal to 2.8% of total state and local taxes. Table II.7 reports 2001 corporate tax collections by industry.

[9] See Wisconsin Corporate Income and Franchise Tax, http://www.dor.state.wi.us/ra/corpintx.pdf for details.

TABLE II.7
WISCONSIN CORPORATE INCOME AND FRANCHISE TAX, 2001

Industry	Net Tax ($ millions)
Manufacturing	$121.26
Retail Trade	46.43
Wholesale Trade	31.17
Services	50.76
Utilities	97.85
Finance, Insurance & Real Estate	70.16
Other*	54.24
Total 2001 Corporate Collections	$471.87

* Transportation, agriculture, mining, construction and unknown.

E. UTILITY TAXES

Wisconsin imposes a gross revenue or ad valorem tax on utilities in lieu of local property taxes. For purposes of the study, utility taxes include taxes on gross receipts paid by municipal and private light, heat and power companies and electric cooperative associations, as well as ad valorem taxes (state-levied taxes on value of property) paid by telephone companies, pipelines and municipal electric association projects.

The study assumes that the tax imposed on the utility is passed on to the end-users. Using information from the Federal Agency Regulatory Commission and 1997 Census data on consumption or use by industries and households, the allocation of taxes paid by residential users, manufacturers and non-manufacturers can be made.

CHAPTER III
METHODOLOGY AND ASSUMPTIONS

A. INTRODUCTION

As described in Chapter I, tax incidence is measured by the taxes borne by a household, as a share of that household's income. This chapter describes the concepts and methodology required to calculate this ratio. Table III.1 summarizes the steps required in analyzing tax incidence.

TABLE III.1
STEPS REQUIRED TO DETERMINE TAX INCIDENCE

STEP 1:	**Determine Household Income** - What is a household? - What constitutes household income?
STEP 2:	**Determine Tax Burden** - Determining Initial Impact - Shifting of Taxes - Imputations - Allocation of Taxes to Households

The first step requires the determination of household income. This, in turn, requires that households be defined. Section B describes how households are defined and constructed, while Section C provides a definition of household income and discusses which income sources are used. Section D discusses the data sources for constructing the households and their income as well as data sources for tax impacts.

The second step requires measuring the tax burden for all state and local taxes; this includes taxes initially imposed on individuals and taxes initially imposed on business entities. The incidence of taxes imposed on individuals is somewhat straight forward because it is assumed that these taxes are borne by the same individual who is legally liable to pay the tax, i.e., these taxes cannot be shifted to another individual. On the other hand, taxes imposed on businesses require several assumptions not needed for the individual taxes. Sections E discusses the shifting assumptions used for each tax included in the analysis. Once the distribution of taxes is determined in the aggregate, these taxes need to be allocated to individual households. Section F describes the allocation factors used to determine the level of taxes borne by each household.

B. DEFINITION OF HOUSEHOLDS

For purposes of the study, a household is defined as an economic unit consisting of members who typically reside together and who are related by blood, marriage or adoption. Individuals who are claimed as dependents on the tax return of another tax filer are considered part of the household of the tax filer whether or not they live at the same address. Thus, a child who is away at college is considered part of the household; on the other hand, an adult child who lives with his or her parents is considered a separate household. Two unrelated individuals who live together are considered two separate households. Part-year residents are excluded from the study. Married people filing separately are also excluded. Details of Wisconsin households are found in Chapter IV.

C. DEFINITION OF INCOME

The study uses an income concept that is broader than either Federal Adjusted Gross Income (FAGI) or Wisconsin Adjusted Gross Income (WAGI) that are used for federal and state income tax purposes. Household income used in the study includes both taxable and nontaxable portions of income from the following sources:

- wages and salaries (including deferred compensation)
- dividends
- realized capital gains
- interest earnings
- rent and royalty
- net farm income
- net business income
- annuities and pensions
- social security benefits
- unemployment compensation
- sick pay
- miscellaneous taxable income (e.g., alimony received, gambling prizes)
- government money transfer payments (W-2 and child-care subsidies)
- imputed net rental value of owner-occupied housing[1]

Income is reduced by expenses that are essential to earning income, such as employee business expenses and moving expenses. Income is also reduced by casualty losses and alimony paid.

Tax incidence measures taxes relative to a household's ability to pay the taxes; thus, income is determined before taxes are paid. To obtain before-tax income, any business tax assumed to be shifted backward to workers is added to income. Additionally, any unshifted business tax is added to income. When a business owner can shift the tax to consumers, for example in the form of higher prices, the income he receives correctly reflects his ability to pay. The owner has, in effect, already recovered the tax before receiving the income. However, when a business owner cannot shift the tax, the income she receives is her income after payment of the business tax. To reflect her ability to pay the tax, the amount of unshifted taxes should be included in income.

Appendix 2 identifies the data sources for each of these income elements and compares the components of the various income concepts.

[1] Like other tax incidence studies, the imputed rental value of a homeowner's home is included to ensure comparability of income represented by investment in a home as compared to any other investment. Consider two persons, one who invests $100,000 in a home that he or she could rent for $8,500 annually, and another who purchases an annuity that pays $8,500 annually, which its recipient uses for rent. Imputing rent to the first person, who bought the home, recognizes that the two persons are in similar financial situations. The homeowner essentially rents the home and uses that income to pay for his or her housing. Financially, this person's situation is the same as the one who uses income from an annuity to pay rent. See Joint Committee on Taxation (1993) and Cronin (1999).

D. MEASUREMENT PROCEDURES

The study begins with data gathered from individual income tax returns and Homestead Credit returns for tax year 2001 through the 2001 Department of Revenue's Individual Income Tax Model. This information is collected on a stratified random sample of 2001 income tax returns, homestead tax relief credit claims and farmland preservation credit claims weighted to reflect a population of 2.55 million tax filers/credit claimants.

Because not all people are required to file income tax returns (i.e., non-filers), the Tax Model does not cover the entire income-receiving population. As such, data for low-income households that are not in the tax-filing population and that do not file a homestead credit return have to be obtained from non-Department of Revenue sources. Data from the Department of Workforce Development (DWD) allow nontaxable income from Wisconsin Works (W-2) payments and child-care subsidies to be included.[2] The DWD data also allow for additional sample members who did not file either a 2001 Wisconsin income tax return or a homestead or farmland preservation credit claim. Non-filer households that received social security benefits were also added to the Tax Model data. A one-in-ten sample was drawn from the 174,000 non-filer social security recipients using Internal Revenue Service (IRS) informational return data. The IRS data are also used to identify other income sources for non-filers and for nontaxable income of tax filers.[3]

Appendix 3 compares the tax incidence sample data to U.S. and Wisconsin aggregate data sources to verify that the sample data provide a good approximation to the state population.

For several tax types, data exist to identify the initial impact, i.e., who is the legal payer of the tax. For example, data exist on which household initially paid individual income taxes. Data also exist on corporate income and franchise taxes by business sector; thus, the share of corporate taxes paid by manufacturers, commercial businesses, wholesale and financial businesses are known. For other taxes, data do not exist to identify who initially paid the tax; in these cases an allocation of taxes initially paid by each sector must be derived. In particular, sales tax data are reported by the entity that collects the tax, not by the entity (individual consumer or business) that paid the tax. Because the initial payer is unknown, the study relies on U.S. Census and other industry data to allocate the initial impact of the sales tax between consumers and businesses. Once the allocation is made to each business sector, the various shifting assumptions are employed. [4]

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[2] Wisconsin Works (W-2) is the welfare replacement program for Aid to Families with Dependent Children (AFDC) based on work participation. To be eligible for cash benefits, a family's gross income must be at or below 115% of the Federal Poverty Level (FPL). Under W-2, a child care subsidy is available to all low-income families (at or below 185% of FPL for applicants and up to 200% of FPL for participants) who need child care in order to work, participate in Learnfare or a W-2 employment position.

[3] The non-filer social security recipients are those individuals whose income level is below the tax filing requirement but is too high to qualify for the homestead credit. Using Social Security Administration data for Wisconsin, social security recipients assumed to be children are excluded from the analysis. Also excluded from the analysis are welfare and social security recipients whose informational returns indicate out-of-state residency or an income level that exceeds the federal and Wisconsin threshold requirement for tax-filing.

[4] See Appendix 3 for a comparison of the estimate of business taxes used in the study to other estimates of business taxes.

E. SHIFTING ASSUMPTIONS

The study develops three sets of shifting assumptions for each business tax. The three variants are designed to capture the most regressive to the most progressive tax incidence possible.

The incidence of a business tax depends on the ability of the business to shift the tax to either consumers or workers. Whether the tax is shifted forward to consumers or backward to workers depends on the national or international competition facing the business sector. It is assumed that a business that competes in national or international markets cannot easily shift the tax to consumers, as it would be undersold by lower-priced competitors. Thus, any shifting would be primarily to workers in the form of lower wages. In contrast, a business sector that competes primarily in local markets is more able to shift the tax to consumers so long as all businesses in the sector face the same tax.

Tax incidence also depends on how much of a tax is shifted to non-Wisconsin residents. A tax shifted to consumers can be borne by non-resident tourists or by consumers of Wisconsin goods shipped out-of-state. Similarly, non-Wisconsin residents may be shareholders of Wisconsin businesses and thus bear part of the tax borne by the business owner. Generally, the greater the degree of corporate ownership in a sector, the larger is the percentage of non-resident business owners. The study excludes from analysis all taxes borne by non-Wisconsin residents.

For each tax, the assumptions used in the regressive variant are chosen to represent the most regressive outcome; thus, the regressive variant assumes that all business taxes are shifted to either consumers or workers. Some of the taxes shifted to consumers are exported to non-resident consumers of Wisconsin goods.

The progressive variant is based on assumptions chosen to represent the most progressive outcome. The progressive variant assumes no shifting of business taxes; the entire business tax burden is borne by business owners. However, because non-residents own some Wisconsin businesses, some of the burden is exported to non-resident business owners under the progressive variant.

The extent of exporting to non-resident owners depends on the type of business ownership – whether the business is a corporation or is a non-corporate business (e.g., a sole-proprietorship, partnership or other pass-through entity). Based on data from 2001 DOR samples of corporate and partnership returns, it is assumed that 94% of manufacturing businesses are corporate-owned and that 70% of non-manufacturing is corporate-owned. It is further assumed that Wisconsin ownership of corporate businesses mirrors Wisconsin's share of population. Thus, Wisconsin residents are assumed to own between 2% and 5% of corporate businesses. On the other hand, it is assumed that Wisconsin residents own almost all of non-corporate businesses (between 90% and 95%).

The assumptions used in the plausible variant lie somewhere between the regressive and progressive variants and reflect a more realistic outcome, with the tax burden being shared by consumers, workers and business owners. The plausible variant allows for tax exporting to both out-of-state consumers and business owners. Appendix 4 outlines the conceptual methodology employed in the plausible variant.

Table III.2 summarizes the shifting assumptions used under the three variants for each business tax.

TABLE III.2
SHIFTING ASSUMPTIONS UNDER THREE VARIANTS

Assumptions	Shifting	Exporting
Regressive	100% Shift to Consumers &/or Labor	Tourists/Out-of-State Consumers
Plausible	Owners' Share=National Ave. capital rate Remaining Shifted to Consumers & Labor	Tourists/Out-of-State Consumers Out-of-State Business Owners
Progressive	100% Shift to Business Owners	Corporations: 95-98% non-resident owners Non-incorporated Businesses: 5-10% non-resident owners

The assumptions used for each tax are developed below.

1. Individual Income Taxes

For the individual income tax, only one case was included in the analysis to reflect the assumption that that legal payer of the tax bears the tax. This rests on the assumption that labor is immobile to the extent that workers, in the short-run, are unable or unwilling to relocate to lower-tax areas.

2. Corporate Income and Franchise Tax

The shifting of the corporate income and franchise tax depends on the business sector on which the tax is imposed. The study analyzes the tax for the manufacturing, commercial (i.e., retail and services), wholesale/financial, and utility sectors; all other sectors are combined (agriculture, construction, and transportation).

Because utilities are guaranteed a set rate of return, the study assumes that the entire corporate income tax paid by utilities is shifted to consumers of residential utility services or to consumers of business goods and services that required business utility services.

The three variants used for the other sectors capture the debate regarding the incidence of the corporate tax. All variants assume that capital is mobile and seeks the highest possible after-tax return.

- The regressive variant assumes that the imposition of a state corporate income tax reduces the after-tax return and causes capital to seek lower-tax locations. As capital leaves the higher-tax location, corporate business activity in the state will fall; as a result, prices increase (due to decreased supply) and/or payments to the factors of production (land and labor) decrease (due to reduced factor demand) until the after-tax return in the state imposing the tax is equal to the return on capital elsewhere. Thus, the regressive variant assumes a complete shifting of the tax such that corporate owners bear none of the tax. It is assumed that labor bears a larger share of the tax in the manufacturing sector that competes in national and global markets, whereas sectors that compete primarily in local markets would shift more of the tax to consumers.

- The progressive variant assumes that the burden of the corporate income tax falls completely on corporate owners. This reflects the argument that the imposition of a tax does not occur in isolation; to the extent that other states impose a similar tax, owners of capital cannot completely escape the tax. Implicit in the progressive variant is the assumption that Wisconsin's corporate tax rate is close to the national average corporate tax rate.[5] Further, it is assumed that there is limited mobility between the corporate and non-corporate sectors; thus, the burden is borne by owners of corporate capital rather than owners of capital in general. It is assumed that the share of corporate ownership owned by Wisconsin residents reflects Wisconsin's share of total national population. Thus, the bulk of the tax burden borne by owners of corporate capital are exported to nonresident owners.

- The plausible variant combines the assumptions of the other variants and assumes that the tax burden is shared between corporate owners, consumers and workers. It is assumed that corporate owners cannot completely escape the tax due to the imposition of a similar tax in other locations but can shift some of the tax to consumers and workers. The share of the tax borne by workers is larger in the manufacturing sector relative to other sectors that compete in more local markets.

Table III.3 summarizes the assumptions used for the incidence of the corporate tax.

3. Sales Tax

While data on sales tax collections identify the sector that collects the tax, data do not exist to identify whether the purchasers of taxable goods and services are individual consumers or businesses. As such, an estimate of who initially pays the tax needs to be developed before the incidence can be determined. The study allocates the state and county sales tax on purchases made by consumers, manufacturers and non-manufacturers. The purchases are for goods and services in the manufacturing, utility, financial, retail, wholesale and service sectors. The allocation of these purchases (to consumers, manufacturers or non-manufacturers) relies primarily on 1997 U.S. Census data (Subject Series and Company Statistics Series).[6]

In addition, the sales tax paid on construction materials are allocated to consumers (for single unit residential structures), manufacturers (for industrial structures) and non-manufacturers (multi-family housing structures, office buildings, commercial and other structures) using U.S. Census data (2001 Value of Private Construction Put in Place and 1997 U.S. Census – Industry Series).

Sales taxes paid on capital expenditures made by businesses are based primarily on DOR 2001 use tax collections by Standard Industrial Classification (SIC) codes. DOR data were used to allocate the use taxes paid for asset acquisitions versus costs of production.

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[5] The national average rate is not the average statutory rate since states have different tax provisions, such as tax base, apportionment and throw-back rules that affect corporate tax liability. The national average rate can be estimated by the ratio of total state corporate tax collections to total corporate net profits.

[6] See Appendix 5 for a more detailed discussion of data sources and assumptions used to allocate sales taxes.

TABLE III.3
INCIDENCE ASSUMPTIONS FOR
CORPORATE INCOME AND FRANCHISE TAX, 2001 ($471.8 MILLION)

	Manufacturing	Commercial[1]	Utility[2]	Wholesale/Finance	Other[3]
Tax $	$121,300,000	$97,200,000	$97,800,000	$101,300,000	$54,241,323
Incidence Assumptions					
Regressive	40% consumer 60% labor	80% consumer 20% labor	100% consumer	80% consumer 20% labor	80% consumer 20% labor
Progressive	100% business owner	100% business owner	100% consumer	100% business owner	100% business owner
Plausible	83.36% business owner 3.32% consumer 13.32% labor	73.9% business owner 20.9% consumer 5.2% labor	100% consumer	66% business owner 17% consumer 17% labor	79.7% business owner 10.15% consumer 10.15% labor
WI Corporate Ownership					
Regressive	n/a	n/a	n/a	n/a	n/a
Progressive	2%	5%	2%	2%	30%
Plausible	2%	5%	2%	2%	30%
Type of Consumer[4]					
Regressive	17% WI consumer 83% out-of-state consumer	86% WI consumer 14% tourist/out-of-state consumer	73% WI Consumer 27% out-of-state consumer	75% WI consumer 25% tourist/out-of-state consumer	75% WI consumer 25% tourist/out of state consumer
Progressive	n/a	n/a	73% WI Consumer 27% out-of-state consumer	n/a	n/a
Plausible	17% WI consumer 83% out-of-state	86% WI consumer 14% tourist/out of state	73% WI Consumer 27% out-of-state consumer	75% WI consumer 25% tourist/out-of-state consumer	75% WI consumer 25% tourist/out of state consumer
Share Exported					
Regressive	33.2% out of state	12% tourist/out-of-state consumer	27% out-of-state consumer	20% tourist/out-of-state consumer	20% tourist/out-of-state consumer
Progressive	98% business owner	95% business owner	27% out-of-state consumer	98% business owner	70% owner
Plausible	81.8% business owner 2.8% out-of-state consumer	70.2% business owner 2.9% tourist/out-of-state	27% out-of-state consumer	64.7% business owner 4.2% tourist/out -of-state consumer	55.8% business owner 2.5% tourist/out-of-state consumer
Share Borne by WI Residents					
Regressive	6.8% WI consumers 60% WI labor	68% WI consumer 20% labor	73% WI Consumer	60% WI consumer 20% labor	60% WI consumer 20% labor
Progressive	2% WI business owner	5% WI business owner	73% WI Consumer	2% WI business owner	30% WI business owner
Plausible	1.7% WI business owner 0.6% WI consumers 13.3% WI labor	3.7% WI capital owners 18% WI consumers 5.2% WI labor	73% WI Consumer	1.3% WI capital owners 12.8% WI consumer 17% WI labor	23.9% WI business owners 7.6% WI consumer 10.2% WI labor
Allocation Factor	Corporate Owners -Distribution of capital income Consumers - Consumer expenditures on manufactured goods Labor - Distribution of wages and salaries	Corporate Owners -Distribution of capital income Consumers - Consumer expenditures on consumer goods and services Labor - Distribution of wages and salaries	Consumers - Consumer expenditures on electric, gas and communication	Corporate Owners -Distribution of capital income Consumers - Consumer expenditures on financial services Labor - Distribution of wages and salaries	Corporate Owners -Distribution of capital income Consumers - Consumer expenditures on agriculture, mining, transportation Labor - Distribution of wages and salaries

[1]Retail and services
[2]Communication, Electricity and Gas
[3]Agriculture, Mining, Construction, Transportation, Other
[4]Non-resident tourist

The analysis assumes that consumers pay all sales tax on occasional sales, such as used boats and cars.

The Table III.4 shows the amount of state and local sales tax initially paid by consumers, manufacturers and non-manufacturers for various types of purchases. Sixty-seven percent of the sales tax was initially paid by consumers while 33% was paid by business (7% by manufacturers and 26% by other businesses).

Shifting Assumptions. Table III.5 shows the assumptions used for the shifting of sales and use taxes.

It is assumed that consumers are unable to shift the sales and use taxes they pay on their taxable purchases. Thus, 67% of the sales tax is borne by the household that initially paid the tax.

The regressive variant assumes that the sales and use taxes paid by manufacturers are shifted primarily to workers in the form of lower wages, whereas taxes paid by non-manufacturers are shifted primarily to consumers in the form of higher prices.

TABLE III.4
STATE AND LOCAL SALES/USE TAXES PAID BY CONSUMERS, MANUFACTURERS AND NON-MANUFACTURERS, 2001 ($3,741.7 Million)

	Consumer ($ millions)	Manufacturers ($ millions)	Non - Manufacturers ($ millions)	Total ($ millions)	% of Total
Construction	$118.4	$19.5	$92.0	$230.0	6%
Manufacturing.	21.1	7.1	51.9	80.1	2
Utility	190.2	91.1	157.9	439.2	12
Financial	8.7	2.3	6.4	17.5	0.5
Services	251.7	79.9	219.3	550.9	15
Retail	1,819.9	0.0	314.6	2,134.5	57
Wholesale	0.8	27.1	60.4	88.3	2
Capital Expenditures	0.0	13.7	64.4	78.1	2
Agriculture & Mining	0.0	11.3	23.2	34.5	1
Occasional Sales	$88.5	$0.0	$0.0	$88.5	2%
TOTAL	$2,499.4	$252.1	$990.2	$3,741.7	100%
% of Total	67%	7%	26%	100%	

The progressive variant assumes that business owners bear the full share of the sales tax on their purchases

The plausible variant assumes that the share of the sales tax borne by business owners reflects the taxes paid on capital expenditures. For the manufacturing sector, it is assumed that labor bears most of the burden (70%). Business owners bear 13% of the tax, 94% of which is paid by corporations and 6% by non-corporations. Since most corporate owners are non-residents, most of the tax borne by business owners is exported. As a result just 1% of the sales tax paid by manufacturing businesses is in fact borne by Wisconsin business owners. The plausible variant assumes that 17% of the sales taxes paid by manufacturers is borne by consumers in the form of higher prices of manufactured goods. Most of these consumers are assumed to be nonresidents to the extent that manufactured goods are more likely to be shipped out of state rather than consumed by Wisconsin residents. Wisconsin consumers are assumed to bear 3.2% of the sales tax paid by manufacturers.

For the non-manufacturing sector, the plausible variant assumes capital owners bear 16% of the tax; of this amount, 32% is borne by Wisconsin business owners (5.1% of total tax paid by non-manufacturers), and 68% is exported to non-resident owners of capital. Under the plausible variant, Wisconsin consumers of non-manufacturing goods and services bear 57% of the tax, and non-residents pay 10% (tourists and out-of-state consumers). The plausible variant assumes that Wisconsin workers bear 17% of the taxes paid by the non-manufacturing sector.

TABLE III.5
INCIDENCE ASSUMPTIONS FOR
SALES AND USE TAX, 2001 ($3,741.7 MILLION)

	Consumers	Manufacturing	Non-Manufacturing
TAX	$2,499,400,000	$252,100,000	$990,200,000
Ownership Structure	n/a	94% corporate 6% non-corporate	70% corporate 30% non-corporate
Incidence Assumptions			
Regressive	100% consumer	40% consumer 60% labor	80% consumer 20% labor
Progressive	100% consumer	100% business owner	100% business owner
Plausible	100% consumer	13% business owner 17% consumer 70% labor	16% business owner 67% consumer 17% labor
WI Ownership			
Regressive	n/a	n/a	n/a
Progressive	n/a	2% corporate 90% non-corporate	5% corporate 95% non-corporate
Plausible	n/a	2% corporate 90% non-corporate	5% corporate 95% non-corporate
Type of Consumer			
Regressive	98% WI consumer 2% tourist	17% WI consumer 83% out of state consumer	85% WI consumer 15% tourists/out of state
Progressive	98% WI consumer 2% tourist	n/a	n/a
Plausible	98% WI consumer 2% tourist	17% Wi consumer 83% out-of-state consumer	85% WI consumer 15% tourists/out-of-state consumer
Share Exported			
Regressive	2% tourists	33.2% out-of-state consumer	12% tourists/out-of-state consumer
Progressive	2% tourists	92.7% business owner	68% business owner
Plausible	2% tourists	12.1% business owner 14.1% out-of-state consumer	10.9% business owner 10% tourists/out-of-state
Share Borne by WI Residents			
Regressive	98% WI consumer	6.8% WI consumer 60% labor	68% WI consumer 20% WI labor
Progressive	98% WI consumer	7.3% WI business owner	32% WI business owner
Plausible	98% WI consumer	2.9% WI consumer 1% business owner 70% WI labor	57% WI consumer 5.1% WI business owner 17% WI labor
Allocation Factor	Consumer expenditures on sales taxable goods and services	Consumer expenditures on manufactured goods Corporate owners - distribution of dividend income Non-corporate owners -distribution of business income Labor - distribution of wages & salaries	Consumer expenditures on non-manufactured goods and services Corporate owners - distribution of dividend income Non-corporate owners -distribution of business income Labor - distribution of wages & salaries

4. Property Tax

Data exist to analyze property taxes paid on residential, manufacturing, commercial, utility, and agricultural properties.

Appendix 6 details the derivation of 2001 property taxes on recreational and rental housing. The study estimates that property taxes on rental housing amounted to $1,623.4 million: $916.7 million in occupied multi-units, $143.1 million in vacant multi-units, $250.0 million in occupied single-units, and $313.7 million in unoccupied single-unit dwellings.[7] Recreational property is estimated to account for $508.3 million in property tax, with Wisconsin residents owning 82% of recreational property. Homeowners and owners of recreational or vacant housing are assumed to bear the property tax.

For commercial and manufacturing property, the analysis employs variants that reflect the debate between the "traditional view" and "new view" of the property tax. The traditional view argues that property tax is fully shifted to consumers or workers. The mechanism of the shift is similar to that described for the corporate tax, namely that capital will migrate from high-tax locations to lower tax jurisdictions until the local after-tax return to capital equals the national average. This is captured in the regressive variant.

The progressive variant assumes that business owners bear the full property tax burden on business property.

The plausible variant captures the "new view" of business property taxes that argues that capital cannot completely escape taxation since practically all locations have some form of property tax. As a result, the owner bears the share of the tax that represents the national average property tax rate. Taxes that exceed the national average are shifted either to consumers or workers. Thus, the plausible variant assumes that the property tax on business properties are borne by business owners, consumers, and workers.

In the case of rental property (rental residential and apartments), the plausible variant employs more of the traditional view of property taxes. For these taxes, it is assumed that 35% of the tax of occupied rental housing is borne by the landlord, while 65% is borne by the renter. The shifting assumptions for these taxes rest on the following: 1) little corporate ownership is assumed for these properties; 2) the demand for rental property is not perfectly inelastic, i.e., there is some intra-locational mobility of renters; and 3) the supply of rental property is not perfectly elastic, i.e., there is some immobility of capital invested in rental property.

Landlords bear the tax burden on unoccupied rental housing under all variants.

The regressive variant assumes that landlords are able to pass all of the property taxes on occupied rental housing on to tenants in the form of higher rents. The progressive variant assumes the opposite, that landlords are unable to shift any of the property tax on to tenants and thus bear the entire property tax burden.

[7] Unoccupied single units include non-rental vacant housing.

Table III.6 describes the incidence assumptions by type of property. Taxes are broken into the following categories: residential, commercial, manufacturing and agriculture. These categories conform to the property tax classifications used in property tax administration. For administrative purposes, residential property refers to housing of three or fewer units. It includes primary residences, recreational homes, and occupied and unoccupied rental housing. Commercial property includes housing of four or more units as well as non-manufacturing property. For purposes of the study, the residential property tax burden described in future chapter refers to the property tax on all types of housing, rental and non-rental, regardless of the number of units.

TABLE III.6
INCIDENCE ASSUMPTIONS FOR
PROPERTY TAXES, 2001 ($6,449.5 MILLION)

RESIDENTIAL ($4,456 MILLION)				
	Primary Residence	**Recreational/ Non Filer Residence**	**Rental (Occupied)**	**Unoccupied**
TAX	$3,384,151,000	$508,240,000	$250,000,000	$313,700,000
Ownership				
Corporate	0%	0%	10%	0%
Non Corporate	100%	100%	90%	100%
Incidence Assumptions				
Regressive	100% property owner	100% property owner	100% renter	100% property owner
Progressive	100% property owner	100% property owner	100% property owner	100% property owner
Plausible	100% property owner	100% property owner	35% property owner 65% renter	100% property owner
WI Ownership				
Regressive	n/a	82% Non-corporate	n/a	75% Non-corporate
Progressive	n/a	82% Non-corporate	75% corporate 100% non-corporate	75% Non-corporate
Plausible	n/a	82% Non-corporate	75% corporate 100% non-corporate	75% Non-corporate
Type of Consumer				
Regressive	n/a	n/a	90% WI renter 10% tourist	n/a
Progressive	n/a	n/a	n/a	n/a
Plausible	n/a	n/a	90% WI renter 10% tourist	n/a
Share Exported				
Regressive	0%	18% property owner	0%	25% property owner
Progressive	0%	18% property owner	2.5% property owner	25% property owner
Plausible	0%	18% property owner	0.88% property owner 6.5% tourist	25% property owner
Share Borne by WI Residents				
Regressive	100% Non-corporate	82% property owner	100% WI renter	75% property owner
Progressive	100% Non-corporate	82% property owner	97.5% property owner	75% property owner
Plausible	100% Non-corporate	82% property owner	34.12% property owner 58.5% WI renter	75% property owner
Allocation Factor	Property Owner: Dstribution of residential property taxes paid (from school property tax credit data	Property Owner: Schedule A Deductions for property taxes in excess of primary residence Schedule E for Own-Use Rental (55% of total expenses assumed to be property taxes) Remainder: Distributed based on Dividend and Interest Income	Property Owner: Schedule E Rental Income WI Renter: Statistical Match Distribution of rent claimed for school property tax credit or homestead credit (assumed for single units)	Property Owner Schedule E Rental Income

TABLE III.6 (cont.)
INCIDENCE ASSUMPTIONS FOR PROPERTY TAXES, 2001 ($6,449.5 MILLION)

	Commercial ($1,420.7 Million)			Manufacturing	Agriculture
	Rental (Occupied)	Rental (Unoccupied)	Business		
TAX	$916,653,741	$143,061,567	$360,974,000	$295,200,000	$262,200,000
Ownership					
Corporate	10%	10%	70%	94%	5%
Non Corporate	90%	90%	30%	6%	95%
Incidence Assumptions					
Regressive	100% renter	100% property owner	80% consumer 20% labor	40% consumer 60% labor	100% consumer
Progressive	100% property owner	100% property owner	100% business owner	100% business owner	100% owner
Plausible	35% owner 65% renter	100% property owner	100% business owner	100% business owner	65.5% owner 34.5% consumer
WI Ownership					
Regressive	n/a	75% corporate 100% non-corporate	n/a	n/a	n/a
Progressive	75% corporate 100% non-corporate	75% corporate 100% non-corporate	5% corporate 95% non-corporate	2% corporate 95% non-corporate	80% corporate 100% non corporate
Plausible	75% corporate 100% non-corporate	75% corporate 100% non-corporate	5% corporate 95% non-corporate	2% corporate 90% non-corporate	80% corporate 100% non corporate
Type of Consumers					
Regressive	100% WI renter	n/a	85% WI consumer 15% tourist/out of state consumer	17% WI consumer 83% out-of-state consumer	10% WI consumer 90% out-of-state consumer
Progressive	100% WI renter	n/a	n/a	n/a	n/a
Plausible	100% WI renter	n/a	n/a	17% WI consumer 83% out-of-state consumer	10% WI consumer 90% out-of-state consumer
Share Exported					
Regressive	0	2.5% property owner	6.4% tourist 5.6% out-of- state consumer	33.2% out-of-state consumer	90% out-of-state consumer
Progressive	2.5% owner	2.5% property owner	68% business owner	92.7% business owner	1% owner
Plausible	0.88% owner	2.5% property owner	68% business owner	92.7% business owner	0.65% business owner 31.1% out-of-state consumer
Share Borne by WI Residents					
Regressive	100% WI renter	97.5% WI property owner	68% WI consumer 20% labor	6.8% WI consumer 60% labor	10% WI consumer
Progressive	97.5% WI property owner	97.5% WI property owner	32% business owner	7.3% business owner	99% business owner
Plausible	34.12% WI property owner 65% WI renter	97.5% WI property owner	32% business owner	7.3% business owner	64.85% business owner 3.45% WI consumer
Allocation Factor	Property Owner: Schedule E Rental WI Renter: Distribution of rent claimed for school property tax credit or homestead credit (assumed for multi units) Statistical match with sample data for imputed renters	Property Owner: Schedule E Rental	Corporate Business Owner: Distribution of dividend income Non-corporate Business Owner: Distibution of business income	Corporate Business Owner: Distribution of dividend income Non-corporate Business Owner: Distibution of business income Consumer: Consumer expenditure on manufacturing goods Labor: Distribution of wages/salaries	Corporate Business Owner: Distribution of dividend income Non-corporate Businessl Owner: Distibution of farm income Consumer: Consumer expenditure on food

5. Utility Tax

Wisconsin imposes a gross revenue tax or an ad valorem tax on utilities in lieu of local property taxes. For purposes of the study, utilities refer to municipal and private light, heat and power companies, and electric cooperative associations that pay taxes on their gross receipts and pipelines, telephone companies, and municipal electric association projects that pay an ad valorem tax. The study assumes that the tax imposed on the utility is passed on to the end-users. Using information from the Federal Energy Regulatory Commission and 1997 Census data, the allocation of taxes shifted to residential users, manufacturers and non-manufacturers can be made. The shifting assumptions for those utility taxes shifted to the manufacturing and non-manufacturing sectors follow those used for the property tax.

Table III.7 describes the incidence assumptions used for utility taxes.

6. Summary: Distribution of Business Taxes

The previous sections looked at the shifting assumptions by tax type for each business sector. This section summarizes the assumptions for business taxes as a whole.

Table III.8 compares the shifting assumptions used for business taxes by tax type. Under the regressive variant, the largest share of the burden is borne by Wisconsin consumers for all taxes. Under the progressive variant, business owners bear the entire share of each tax, with a large share of the taxes exported to non-resident business owners. Under the plausible variant, all taxpayer categories bear some share of sales, corporate and utility taxes, and a significant share of the burden is exported to either non-resident owners or consumers. Under the plausible variant, the property tax is borne by business owners, with a large share of the tax exported to non-resident business owners.

Table III.9 compares the shifting assumptions for property taxes on rental and unoccupied housing under the three variants. Under the regressive variant, renters bear 70% of all property taxes on rental housing, with landlords bearing only the property taxes on unoccupied rental housing (23%). The progressive variant assumes that landlords bear all the property tax on rental housing with minimal exporting to non-resident landlords. The plausible variant assumes the property tax on rental housing is shared between tenants (46%) and landlord (48%), with 6% exported to non-residents.[8]

[8] As noted on page 28, the plausible variant assumes that tenants bear 65% of the property tax on occupied rental housing; landlords bear 35% of property tax on occupied rental housing and all of the property tax on unoccupied rental housing. The landlords' combined burden for occupied and unoccupied rental housing is 48%.

TABLE III.7
INCIDENCE ASSUMPTION FOR
UTILITY TAXES, 2001 ($234.7 MILLION)
(Electric, Natural Gas, Pipeline, Telephone)

	Imposed on Utilities but Initially Shifted to:		
	Residential	Manufacturing	Non-Manufacturing
TAX $	$97,998,000	$58,395,000	$78,311,000
Ownership Structure	n/a	94% corporate 6% non-corporate	70% corporate 30% non-corporate
Incidence Assumptions			
Regressive	100% consumer	40% consumer 60% labor	80% consumer 20% labor
Progressive	100% consumer	100% business owner	100% business owner
Plausible	100% consumer	100% business owner	61% business owner 31% consumer 8% worker
WI Ownership			
Regressive	n/a	n/a	n/a
Progressive	n/a	2% 90% non-corporate	5% corporate 95% non-corporate
Plausible	n/a	2% corporate 90% non-corporate	5% corporate 95% non-corporate
Type of Consumer			
Regressive	100% WI consumer	17% WI consumer 83% out-of-state consumer	85% WI consumer 15% out-of-state consumer
Progressive	100% WI consumer	n/a	n/a
Plausible	100% WI consumer	17% WI consumer 83% out-of-state consumer	85% WI consumer 15% tourists/out-of-state
Share Exported			
Regressive	0%	33.2% out-of-state consumer	12% tourist/out-of-state consumer
Progressive	0%	92.7% business owner	68% business owner
Plausible	0%	92.7% business owner	4.7% tourist/out-of-state consumer 41.5% business owner
Share Borne by WI Residents			
Regressive	100% WI consumer	6.8% WI consumer 60% labor	68% WI consumer 20% labor
Progressive	100% WI consumer	7.3% business owner	32% business owner
Plausible	100% WI consumer	7.3% business owner	19.52% business owner 26.35% WI consumer 8% labor
Allocation Factor	Consumer: Consumer expenditure on electricity, natural gas, and telephone services	Corporate Business Owner: Distribution of dividend income Non-corporate Business Owner: Distibution of business income Consumer: Consumer expenditure on manufactured goods	Corporate Business Owner: Distribution of dividend income Non-corporate Business Owner: Distibution of business income Consumer: Consumer expenditure on non-manufactured goods Labor: Distribution of wages/salaries

[1]The incidence assumptions for each sector are the same as for the property tax.

TABLE III.8
DISTRIBUTION OF BUSINESS TAXES BY TAXPAYER CATEGORY
UNDER REGRESSIVE, PLAUSIBLE AND PROGRESSIVE VARIANTS
ALL SECTORS

	WISCONSIN TAXPAYERS			Exported Taxes (%)
	Consumers (%)	Labor (%)	Owners (%)	
Business Property Taxes				
Regressive Variant	32%	27%	0%	41%
Plausible Variant	1	0	33	66
Progressive Variant	0	0	43	57
Sales & Use Tax Paid by Business				
Regressive Variant	56	28	0	16
Plausible Variant	46	28	4	22
Progressive Variant	0	0	27	73
Corporate Income/Franchise Tax				
Regressive Variant	51	26	0	23
Plausible Variant	23	9	4	64
Progressive Variant	15	0	5	79
Utility Taxes Paid by Business				
Regressive Variant	42	37	0	21
Plausible Variant	15	5	14	66
Progressive Variant	0	0	21	79
Total Business Taxes				
Regressive Variant	46	28	0	26
Plausible Variant	29	15	13	43
Progressive Variant	3	0	28	69

TABLE III.9
DISTRIBUTION OF PROPERTY TAXES ON RENTAL HOUSING
UNDER REGRESSIVE, PLAUSIBLE AND PROGRESSIVE VARIANTS

	WISCONSIN TAXPAYERS		Exported Taxes
	Tenants	Landlords	
Regressive Variant	70%	23%	7%
Plausible Variant	46	48	6
Progressive Variant	0	93	7

F. TAX ALLOCATION TO HOUSEHOLDS

The assumptions made thus far allow an estimate of the taxes borne by wage earners, consumers, renters, and business owners in the aggregate. The next step is to allocate the total burden of each tax type to individual households.

Individual income taxes are allocated to households based on the income tax imposed on the household.

Property taxes paid on owner-occupied homes (or the rent equivalent for renters) are allocated to households based on property taxes (or rent equivalent) claimed for the school property tax credit on Wisconsin income tax or the homestead credit claim.[9] For non-filers and for income tax filers who did not claim the school property tax credit, property taxes or rent had to be imputed. Property tax/rent equivalent imputations were required for 16%, or 366,000, of tax filers and all 183,129 non-filers. Homeownership was randomly assigned to some of these households based on Census data.[10] The property tax liability for imputed owners was based on the average property tax liability of similar households for which property tax was reported. In particular, the average property tax liabilities of households of similar marital status, age and income decile were used to estimate the imputed property tax liabilities, with property taxes constrained to 40% of the household's income.

For imputed renter households, the property tax equivalent was based on the property tax equivalent for similar households for which rent was reported. The rent equivalent for imputed renters was constrained to no more than 25% of household income. Based on Census and other housing data, it is assumed that 22% of the imputed renter households lived in either rent-free accommodations or in tax-exempt housing.

Table III.10 reports the average property tax for imputed homeowners and property tax equivalent (PTE) for imputed renters by household decile.

The tax burden borne by landlords of rental property is allocated to households based on a measure equal to the larger of rental income (Schedule E, Part I) or the amount of claimed rental depreciation.

Consumption imputations are required to allocate sales tax borne by consumers and to allocate business taxes that are shifted forward to consumers. The sales tax was allocated to households based on the household's share of total taxable consumer expenditures, as estimated from the 2001 Consumer Expenditure Survey (CES) conducted by the U.S. Department of Labor.

CES data were used to estimate household consumption of all goods and services subject to sales tax. Using the CES data, regression analysis estimated total household consumption as a function of income, family size, homeownership, marital status, and age of head of householder, and presence of children under 18. The resulting regression coefficients were used to estimate total taxable consumption for the study households.[11] Appendix 7 details the regression analysis and the imputation of consumption of different goods and services.

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[9] For purposes of the school property tax credit and homestead credit, the property tax equivalent for renters is equal to 20% of annual rent paid if heat is included as part of the rent and 25% of rent paid if heat is not included in the rent.

[10] The number of households assumed to be homeowners were designed to match Census home-ownership rates by age group. Only elderly households were assigned homeownership, with a higher probability of homeownership assigned to married households. Households not assigned home ownership were assumed to either live rent-free or to be renters.

[11] A separate regression analysis was done to estimate households' consumption of all goods and services, some of which are not subject to sales tax, to allocate business taxes shifted forward to consumers.

TABLE III.10
AVERAGE PROPERTY TAX LIABILITY FOR IMPUTED HOMEOWNERS AND RENTERS

Income Decile	Average Property Tax Liability ($)	Average Renter's PTE ($)
Lowest 10%	$1,096	$634
2nd Decile	1,626	866
3rd Decile	1,839	1,122
4th Decile	1,969	1,171
5th Decile	2,190	1,280
6th Decile	2,368	2,199
7th Decile	2,663	2,002
8th Decile	2,765	2,536
9th Decile	3,088	1,877
Top 10%	4,538	2,174
Total Homeowner/RenterCount:	57,315	378,961
Total Property Tax/PTE:	$100,375,009	$442,005,741

*112,800 renters are assumed to live rent-free, based on Census population living with others

Taxes borne by Wisconsin owners of corporate businesses are allocated to households based on their share of total dividends.

The allocation of taxes borne by Wisconsin owners of non-corporate business owners is derived from information reported on IRS tax schedules related to business and rental income. The measure was designed to ensure that households reporting large losses are assigned some capital ownership. In particular, the allocation factor is the sum of the following variables:

(1) the larger of 25% of sole proprietor income (Schedule C) or the amount of claimed Schedule C depreciation;
(2) the larger of rental income (Schedule E, Part I) or the amount of claimed rental depreciation; and
(3) passive and non-passive partnership income (Schedule E, Part II) plus the absolute value of passive and non-passive losses.

The burden on farmers is allocated to households based on each household's share of farm income and farm rental income as reported on IRS Schedules F and E. The allocation of taxes borne by labor is based on the household's share of wages and salaries.

CHAPTER IV
WISCONSIN HOUSEHOLDS

A. INTRODUCTION

As discussed in Chapter III, the economic unit used for the study is the household defined as members who typically reside together and are related by blood, marriage or adoption. Thus, an individual claimed as a dependent is part of the household even if he or she does not live at the same address. On the other hand, two unrelated adults living at the same address are considered two separate households. The study includes those who file income tax returns (tax filers) as well as non-filers.

B. HOUSEHOLD CHARACTERISTICS

There were approximately 2.64 million tax-filing units and 254,000 recipients of welfare and social security benefits who did not file taxes in Wisconsin in 2001. For purposes of the study, approximately 469,000 households were excluded. These were single filers claimed as a dependent on another's tax return, married people filing separately, people filing part-year returns, or social security and welfare recipients who appeared to be part-year residents based on mailing addresses. Single filers who were claimed as dependents on another's return were excluded because they are not considered independent households. Married persons filing separately, about 15,500 filers, were excluded because tax records do not reveal whether these persons formed separate households or were in households with their spouse but filed separately because of legal or financial reasons. Part-year residents were excluded because of the desire to focus on full-year incomes and taxes of residents. Additionally, 9,600 filers with negative income were excluded.[1] These filers have negative incomes due to business losses and other tax shelter activities, and their income reported for tax purposes in any given year is not a good indicator of their true economic well being.

As a result, the study includes 2.413 million households. Table IV.1 summarizes the number of households in the study. Of these, 92.4% were tax-filing households (2.23 million), 7.2% were social security recipients that did not file a Wisconsin tax return (174,500), and 0.4% were welfare recipients and their dependents who also did not file a Wisconsin tax return (8,629).[2]

[1] Negative income occurs when capital losses or business losses exceed positive income.
[2] A tax-filing household refers to a household that either filed a 2001 Wisconsin income tax return or claimed a refundable tax credit. Refundable tax credits are homestead credit, farmland preservation credit, farmland tax relief credit and earned income tax credit.

TABLE IV.1
HOUSEHOLDS IN TAX INCIDENCE STUDY

	Sample Size	Household Estimate	Sampling Rate %	% of Households in Sample
2001 Income Tax Filers/Homestead Claimants	18,827	2,230,335		92.4%
2001 Non-Filer Social Security Recipients	17,450	174,500	10%	7.2%
2001 Non-Filer Welfare Recipients	8,629	8,629	100%	0.4%
Total Tax Burden Sample	44,906	2,413,464	1.9%	100.0%

Table IV.2 summarizes the household characteristics. Around 77% of all households were headed by individuals under 65 years of age. Of these households, 47% were married and 54% owned their own home. For households headed by someone over 64, around 34% were married and 59% owned their own home. The median family income was $53,750. For one-person households, the median family income was $24,400 for people under 65 and $15,325 for people over 64.[3]

TABLE IV.2
HOUSEHOLD CHARACTERISTICS, 2001

Household Characteristics	Count	%
Under 65	1,858,213	77%
Over 64	568,754	23
Total	2,426,967	
% Married[1]		
Under 65		47
Over 64		34
Total		44
Median Family Income 2001	$53,750	
Median Income for Householder Living Alone		
Under 65	$24,400	
Over 64	$15,325	
Total	$20,725	
% Homeowners		
Under 65		54
Over 64		59
Total		55%

[1] Non-filers for which no information was available were assumed to be single.
[2] A random allocation of homeownership was assigned to 50,900 over-65 non-filer households to ensure homeownership rates similar to Census. Property tax liability for these households were based on liability of similar households in the sample based on income, age, and marital status.

[3] See Appendix 3 for a comparison of household characteristics for households included in the study and U.S. Census data.

C. HOUSEHOLD INCOME

Table IV.3 reports the income distribution in Wisconsin in 2001 for each household group. The poorest 20% of households had income less than $15,600 and received around 4% of total income. In contrast the 10% of households with the highest income had income greater than $93,400 and received 35% of total income.

TABLE IV.3
WISCONSIN INCOME DISTRIBUTION, 2001

Household Group	Income Range ($)	% of Total Income
Poorest 20%	$0 - 15,600	3.8%
2nd 20%	15,601 - 27,900	8.7
3rd 20%	27,901 - 44,100	14.2
4th 20%	44,101 - 69,500	22.4
Next 10%	69,501 - 93,400	16.0
Next 9%	93,401 - 254,200	23.4
Top 1%	$254,201 or greater	11.5

The sources of income varied by income. Table IV.4 reports the major income sources by household group.

TABLE IV.4
INCOME SOURCES BY HOUSEHOLD GROUP, 2001

Household Group	Income Sources (as % of Total Household Income)					Total Income[5]
	Wages	Business Income[1]	Investment Income[2]	Retirement Income[3]	Transfer Payments[4]	
Lowest 20%	47%	3%	3%	42%	4%	99%
2nd 20%	66	2	4	24	3	98
3rd 20%	71	2	5	20	1	98
4th 20%	75	2	4	16	1	98
Next 10%	79	3	5	11	0	98
Next 9%	72	7	8	10	0	98
Top 1%	46	23	24	3	0	97
Total	69%	6%	8%	14%	1%	98%

[1] Sole proprietor, farm and rental income.
[2] Capital gains, interest and dividend.
[3] Social Security, pensions and IRA distributions.
[4] Unemployment compensation, welfare and child care subsidies.
[5] Share of total income from the income sources reported in the table.

On average, wages accounted for 69% of household income. However, for the poorest 20% of households, wages accounted for only 47%. The other major source of income for the poorest households was retirement income, accounting for 42% of household income. Transfer payments, such as unemployment compensation and welfare benefits, were 4% of total income for these households.

Wages were the main source of income for all households except for the top 1%, constituting between 66% and 79% of total household income. For all but the highest-income households, retirement income made up most of the rest of household income. Only a small share of income for middle-income households came from business or investment income.

A larger share of business and investment income was seen in the highest-income households. For them, while wages still accounted for a large share of their income (46%), business and investment income were significant sources of income, accounting for 23% and 24% respectively. Retirement income made up 3% of their total income.

Table IV.5 reports the distribution of income elements across the household groups.

TABLE IV.5
DISTRIBUTION OF INCOME ACROSS HOUSEHOLD GROUPS, 2001

Household Group	Wages (% of total)	Business Income[1] (% of total)	Investment Income[2] (% of total)	Retirement Income[3] (% of total)	Transfer Payments[4] (% of total)
Poorest 20%	3%	2%	1%	11%	18%
2nd 20%	8	2	5	15	27
3rd 20%	15	4	9	20	24
4th 20%	24	9	12	24	21
Next 10%	18	8	10	12	7
Next 9%	24	28	26	16	3
Top 1%	8	47	37	3	0
Total	100%	100%	100%	100%	100%

[1] Sole proprietor, farm and rental income.

[2] Capital gains, interest and dividend.

[3] Social Security, pensions and IRA distributions.

[4] Unemployment compensation, welfare and child care subsidies.

The poorest households received only 3% of all wages, 11% of retirement income and 18% of transfer payments. In contrast, the top 20% of households received 50% of wages, 31% of retirement income, but only 10% of transfer payments.

The 10% of households with the highest income received 75% of business income and 63% of investment income, with the top 1% of households receiving 47% of all business income and 37% of all investment income.

Table IV.6 reports the share of household income from nontaxable income.

TABLE IV.6
NONTAXABLE INCOME AS A SHARE OF TOTAL INCOME, 2001

Household Group	Nontaxable Income as % of Total Income	Types of Nontaxable Income: Social Security & Pensions (%)	Interest (%)	Welfare (%)
Lowest 20%	44%	41%	1%	2%
2nd 20%	21	20	1	1
3rd 20%	13	12	0	0
4th 20%	6	6	0	0
Next 10%	3	3	0	0
Top 10%	3	2	1	0
Total	8.3%	7.6%	0.5%	0.2%

On average only 8.3% of household income was from nontaxable sources such as non-taxable social security, pensions and welfare benefits. However, for the poorest households, 44% of the income derives from non-taxable sources, mainly social security and pensions.

Table IV.7 provides greater detail regarding the social security and pension income by showing the shares that were taxable and nontaxable.

On average, 21% of pension income was nontaxable and 86% of social security was nontaxable. However, the share of retirement income that was nontaxable was significantly higher for the poorest households. For the poorest 20% of households, 68% of pensions and all of social security benefits were nontaxable. For these households, the average benefits were $2,375 in pensions and $7,972 in social security. Overall, 97% of all retirement income was nontaxable for these households

The lower middle-income households in the second and third quintiles had income between $27,600 and $43,600. Between 60% and 80% of all retirement income for these households was nontaxable. Pensions received by these households were largely taxable, with only 17% to 35% nontaxable. Their average pensions were between $5,700 and $11,000. On the other hand, their social security benefits were largely nontaxable. These households received between $11,600 and $14,400 in average social security benefits.

Higher-income households had higher retirement benefits, with more benefits from pensions than social security. Most of the pensions for these households were taxable, but only half of their social security benefits were taxable.

TABLE IV.7
WISCONSIN RETIREMENT INCOME
TAXABLE AND NON-TAXABLE, 2001

Household Group	Total Pensions Count	Amount ($m)	Ave. Amt ($)	Nontaxable Pension Count	Amount ($m)	Ave. Amt ($)	Nontaxable %
Lowest 20%	68,023	$162	$2,375	52,646	$110	$2,081	68%
2nd 20%	131,667	754	5,724	59,546	264	4,441	35%
3rd 20%	142,082	1,566	11,025	37,043	280	7,571	18%
4th 20%	148,677	2,486	16,724	43,051	420	9,763	17%
Next 10%	64,410	1,520	23,603	19,850	265	13,330	17%
Top 10%	71,328	2,513	35,235	23,908	549	22,958	22%
Total	626,187	$9,002	$14,375	236,044	$1,888	$7,999	21%
Household Group	Total Social Security Count	Amount ($m)	Ave. Amt ($)	Nontaxable Social Security Count	Amount ($m)	Ave. Amt ($)	Nontaxable %
Lowest 20%	219,259	$1,748	$7,972	219,259	$1,748	$7,972	100%
2nd 20%	153,880	1,778	11,555	153,880	1,774	11,527	100%
3rd 20%	127,166	1,825	14,351	127,166	1,739	13,674	95%
4th 20%	105,359	1,679	15,933	105,359	1,195	11,339	71%
Next 10%	36,519	596	16,316	36,519	307	8,403	52%
Top 10%	37,071	661	17,820	37,071	339	9,142	51%
Total	679,254	$8,286	$12,199	679,254	$7,101	$10,454	86%
Household Group	Total Retirement Income Amount ($m)			Non-Taxable Retirement Income Amount ($m)			Nontaxable %
Lowest 20%	$1,910			$1,858			97%
2nd 20%	2,532			2,038			81%
3rd 20%	3,391			2,019			60%
4th 20%	4,165			1,615			39%
Next 10%	2,116			571			27%
Top 10%	3,174			888			28%
Total	$17,288			$8,989			52%

D. TAX-DEFERRED RETIREMENT ACCOUNTS

Table IV.8 reports the participation rate and average contribution to deferred compensation plans by income group.[4]

Overall, the study finds that 47% of households with wage earners contributed $3.38 billion in 2001 to tax deferred accounts.[5] Participation in these plans increases significantly with income level. Only 4% of earners in the poorest 20% of households contributed to a plan, while 80% of households with the highest income contributed.

The average contribution for all households with earners was $3,724. The poorest 20% of households contributed an average $765, while the top 10% contributed an average $7,754.

[4] The study estimates the amount of employee contributions to 401(k), 403(b) and 457 tax-deferred retirement plans by subtracting the wages and tips for Medicare tax purposes from wages and tips used for income tax purposes. These two wage amounts are reported on the W-2 Wage and Tax Statements. The study assumes the maximum $10,500 contribution per individual. See Appendix 2 for more details on deferred contributions.

[5] When the excluded filers are included, total 2001 contributions were $3.55 billion.

TABLE IV.8
TAX DEFERRED COMPENSATION PLANS,
EMPLOYEE PARTICIPATION AND AVERAGE CONTRIBUTIONS, 2001

Household Group	Total Wages* ($ millions)	Employee Deferred Comp. Contributions ($ millions)	Average Annual Employee Contribution ($)	Participation Rate (%)
Bottom 20%	$2,127	$9	$765	4%
2nd 20%	6,742	108	1,145	25
3rd 20%	11,719	347	1,843	47
4th 20%	19,395	798	2,984	63
Next 10%	14,442	767	4,492	77
Top 10%	25,488	1,353	7,754	80
Total	$79,913	$3,381	$3,724	47%

*Wages after employee contributions.

E. HOUSEHOLD CHARACTERISTICS BY INCOME GROUPS

Table IV.9 shows household characteristics by level of income.

TABLE IV.9
HOUSEHOLD CHARACTERISTICS BY HOUSEHOLD GROUP

Household Group	% Married	% Own Home	% Elderly	Ave. Family Size
Poorest 20%	5%	19%	39%	1.3
2nd 20%	14	34	28	1.5
3rd 20%	38	54	22	1.9
4th 20%	72	77	16	2.5
Next 10%	89	90	11	2.9
Next 9%	92	92	12	3.0
Top 1%	89	93	18	3.0

The marriage rate, home ownership rate and family size increase with household income. The percentage of elderly decrease with household income. Thus, among the poorest 20% of households, 5% are married, 19% own their own home and 39% are over 64. In contrast, among the top 1% of households, 89% are married, 93% own their own home and 18% are elderly.

CHAPTER V
DISTRIBUTION OF TAX BURDENS BY INCOME CLASS
(VERTICAL EQUITY)

A. ASSUMPTIONS

The study analyzes how $15,133 million in state and local taxes were distributed across Wisconsin households. As described in Chapter III, the study assumes that taxes that were initially imposed on individuals were borne by the same individuals.[1] These include individual income taxes, sales taxes on consumer purchases, utility taxes on utilities for residential use and property taxes on owner-occupied housing. These taxes amounted to approximately $10,700 million, or 71% of the total. On the other hand, taxes imposed on businesses, including rental housing, can, under certain economic conditions, be shifted to either consumers, renters, or workers, or exported to non-Wisconsin residents.

The study employs three sets of shifting assumptions, designed to capture the full range of shifting possibilities. Table V.1 summarizes the shifting assumptions under the three variants.

TABLE V.1
SHIFTING ASSUMPTIONS UNDER THREE VARIANTS

Assumption Variant	Shifting Of Business Taxes	Shifting Of Rental Housing Property Taxes
Regressive	100% Shift to Consumers &/or Workers Exporting to Non-Resident Consumers	100% of Shift to Tenants (Occupied Housing)*
Plausible	Owner Share=National Average Rate on Capital Remaining Shifted to Consumers & Workers Exporting to Non-resident Consumers & Business Owners	65% Shift to Tenants (Occupied Housing)*
Progressive	100% Business Owners Exporting to Non-Resident Business Owners	100% Borne by Landlords

***Landlords are assumed to bear 100% of unoccupied rental housing under all variants.**

Both the regressive and progressive variants are based on extreme assumptions and are designed to provide the outer bounds of shifting possibilities. The regressive variant assumes that all business taxes were shifted to either consumers or workers. Some of the taxes shifted to consumers were exported to non-resident consumers of Wisconsin goods. These include tourists buying Wisconsin goods and out-of-state consumers of Wisconsin goods shipped out of state. The regressive variant also assumes that landlords were able to

[1] For Wisconsin tax purposes, income from pass-through entities, such as S-corporations, partnerships and limited liability companies, is generally reported and treated as income of the owners of the business rather than the business entity itself. As a result, the study understates the taxes initially paid by businesses and overstates taxes initially paid by individuals.

pass all of the rental housing property taxes on occupied rental housing on to tenants by raising rents. The landlord bore the tax on unoccupied rental housing under all variants.

The progressive variant assumes no shifting of business taxes; the entire business tax burden was borne by business owners. However, since some owners of Wisconsin businesses are non-residents, some of the tax is exported to non-resident owners. This is particularly the case for corporate businesses, where it is assumed that Wisconsin households own between 2% and 5% of Wisconsin corporations. The progressive variant also assumes that landlords bore the full burden of property taxes on rental housing.

The plausible variant represents the most realistic set of shifting assumptions. The plausible assumptions are derived using a detailed methodology similar to that developed by the Minnesota Department of Revenue in its tax incidence studies. Under this variant, taxes were distributed among owners, workers and consumers, depending on the competitiveness of the business sector. It assumes that the property tax on rental housing was borne by both tenants and landlords. See Chapter III and Appendix 4 for details on the shifting assumptions for each business tax under this variant.

Table V.2 summarizes the final incidence of each tax type under the three shifting assumptions. Under the regressive variant, Wisconsin residents, either as homeowners, consumers/renters, workers or business owners or some combination of all of these, bore 94% of all state and local taxes, and 6% of all taxes were exported to non-Wisconsin residents.

At the other extreme, the progressive variant assumes 86% of all taxes were borne by Wisconsin residents, and 14% of all taxes were exported.

Regardless of which shifting assumption is used, the study estimates that most taxes were borne by the same households that were responsible for paying the tax. The bottom of Table V.2 shows the share of taxes that were borne by the same household that was legally liable to pay the tax. These unshifted taxes were paid by either individual income tax filers, consumers for their direct purchases, business owners for their share of business taxes, or homeowners for property taxes on their homes. The share of unshifted taxes ranged from 72.9% under the regressive variant to 85.6% under the progressive variant. Between 14.4% and 27.1% of taxes were shifted either to Wisconsin consumers, renters or workers or to non-Wisconsin residents.

The next section describes how each of the major taxes was distributed across income levels. Section C examines the incidence of all state and local taxes combined. Section D provides a measure of overall progressivity of each tax as well as the overall tax structure. Section E evaluates the effect of Wisconsin taxes on income distribution. Section F addresses the effect the federal offset of certain state and local taxes has on the progressivity of Wisconsin's tax structure.

B. DISTRIBUTION ACROSS HOUSEHOLDS BY INCOME

In 2001, household income in Wisconsin totaled $120.3 billion. Under a perfectly equal income distribution, each household group would receive the same share of income as it represents in population. Thus, each quintile of the population would receive 20% of total income. Table V.3 shows the actual income distribution in Wisconsin in 2001.

TABLE V.2
FINAL INCIDENCE BY TAX TYPE UNDER THREE SHIFTING ASSUMPTIONS

	Regressive Variant		Plausible Variant		Progressive Variant	
	Amount ($ mil)	Share of Total Taxes	Amount ($ mil)	Share of Total Taxes	Amount ($ mil)	Share of Total Taxes
Individual Income Tax[1]	**$4,371.6**	**28.9%**	**$4,371.6**	**28.9%**	**$4,371.6**	28.9%
Corporate Income/Franchise Tax	**471.8**	**3.1%**	**471.8**	**3.1%**	**471.8**	**3.1%**
Wisconsin Business Owners	-	0.0%	19.9	0.1%	25.6	0.2%
Wisconsin Consumers	239.8	1.6%	106.6	0.7%	71.4	0.5%
Wisconsin Workers	123.3	0.8%	43.9	0.3%	0	0.0%
Non-Wisconsin Residents	108.7	0.7%	301.4	2.0%	374.9	2.5%
Property Tax[2]	**6,313.2**	**41.7%**	**6,313.2**	**41.7%**	**6,313.2**	**41.7%**
Wisconsin Homeowners	3,729.5	24.6%	3,729.5	24.6%	3,729.5	24.6%
Wisconsin Business Owner/Landlords	378.6	2.5%	1082.6	7.2%	1909.1	12.6%
Wisconsin Consumers/Renters	1379.9	9.1%	698.7	4.6%	-49.9	-0.3%
Wisconsin Workers	249.3	1.6%	0	0.0%	0	0.0%
Non-Wisconsin Residents	575.9	3.8%	802.4	5.3%	724.5	4.8%
Sales Taxes	**3741.7**	**24.7%**	**3741.7**	**24.7%**	**3741.7**	**24.7%**
Wisconsin Consumers	3139.9	20.7%	3020.6	20.0%	2449.4	16.2%
Wisconsin Business Owners	0	0.0%	53.1	0.4%	335.2	2.2%
Wisconsin Workers	349.3	2.3%	344.8	2.3%	0	0.0%
Non-Wisconsin Residents	252.5	1.7%	323.2	2.1%	957.1	6.3%
Utility Taxes	**234.7**	**1.6%**	**234.7**	**1.6%**	**234.7**	**1.6%**
Wisconsin Consumers	155.2	1.0%	118.6	0.8%	98	0.6%
Wisconsin Business Owners	0	0.0%	19.5	0.1%	29.3	0.2%
Wisconsin Workers	50.7	0.3%	6.3	0.0%	0	0.0%
Non Wisconsin Residents	28.8	0.2%	90.3	0.6%	107.4	0.7%
Total State and Local Taxes	15,133.0	100.0%	15,133.0	100.0%	15,133.0	100.0%
Borne by Wisconsin Residents	14,167.1	93.6%	13,615.7	90.0%	12,969.2	85.7%
Non-Wisconsin Residents	965.9	6.4%	1,517.3	10.0%	2,163.9	14.3%
Total Unshifted Taxes	11,027.1	72.9%	11,823.6	78.1%	12,947.7	85.6%
Total Shifted Taxes:	**4,105.9**	**27.1%**	**3,309.4**	**21.9%**	**2,185.4**	**14.4%**
Wisconsin Consumers	1,279.3	8.5%	707.4	4.7%	71.4	0.5%
Wisconsin Renters	1088.1	7.2%	689.7	4.6%	(49.9)	-0.3%
Wisconsin Workers	772.6	5.1%	395.0	2.6%	-	0.0%
Non-Wisconsin Residents	965.9	6.4%	1,517.3	10.0%	2,163.9	14.3%

[1] Net of the earned income tax credit.

[2] Net of the homestead, farmland preservation and farmland tax relief credits.

TABLE V.3
WISCONSIN INCOME DISTRIBUTION, 2001

Household Income Group	Income Range ($)	% of Total Income
Poorest 20%	$0 - 15,600	3.8%
2nd 20%	15,601 - 27,900	8.7
3rd 20%	27,901 - 44,100	14.2
4th 20%	44,101 - 69,500	22.4
Next 10%	69,501 - 93,400	16.0
Next 9%	93,401 - 254,200	23.4
Top 1%	$254,201 or greater	11.5

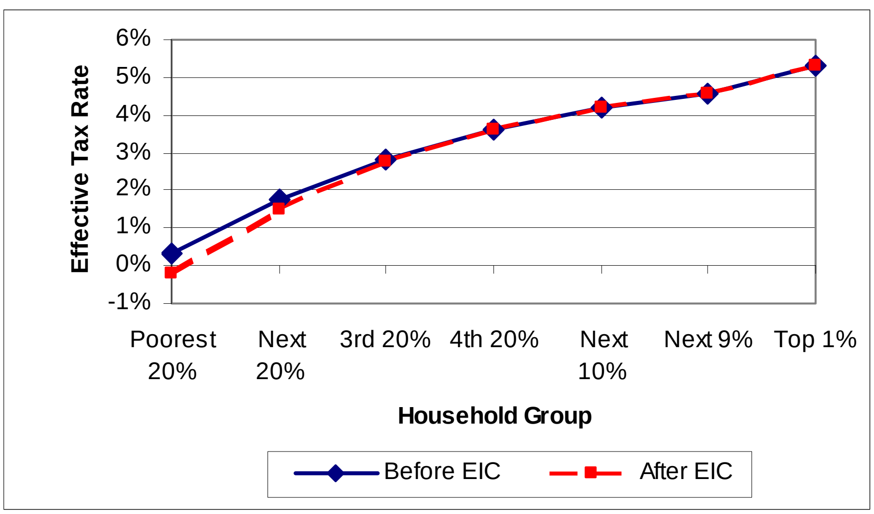
The poorest 20% of households had income less than $15,600 and received 3.8% of total income. In contrast, the 20% of households with the highest income received 50.9% of total income. The top 1% of households had income greater than $254,200 and received 11.5% of total income.

The effective tax rate, i.e., the taxes paid by each household group as a percentage of pre-tax income, allows a comparison of tax burdens across household groups.[2] A progressive tax structure implies that those with a greater ability to pay contribute a larger share of income to taxes than poorer households. Such a tax structure would be revealed if each household group faced a higher tax rate than lower-income households. A proportionate tax structure implies that all households pay the same share of income in taxes, that is, tax rates across groups were the same. Finally, a regressive structure implies that poorer households pay a larger share of income in taxes than higher-income households. Thus, the poorest group would have a higher effective tax rate than the highest-income groups.

1. Individual Income Tax

Individual income taxes, net of the state refundable earned income tax credit, amounted to $4,371 million, or 29% of all state and local taxes in 2001. The effective income tax rate for all households averaged 3.6%. However, as Chart V.1 reports, the effective tax rate increased with income. The solid line represents the income tax burden before the refundable earned income tax credit. Before the credit, the income tax was progressive over all income groups. The individual income tax rate was 0.32% for the lowest income quintile and rose steadily for higher-income households. The top 1% of households paid 5.3% of their income in individual income taxes.

CHART V.1
INCIDENCE OF INDIVIDUAL INCOME TAX
BEORE AND AFTER REFUNDABLE
EARNED INCOME (EIC) TAX CREDITS



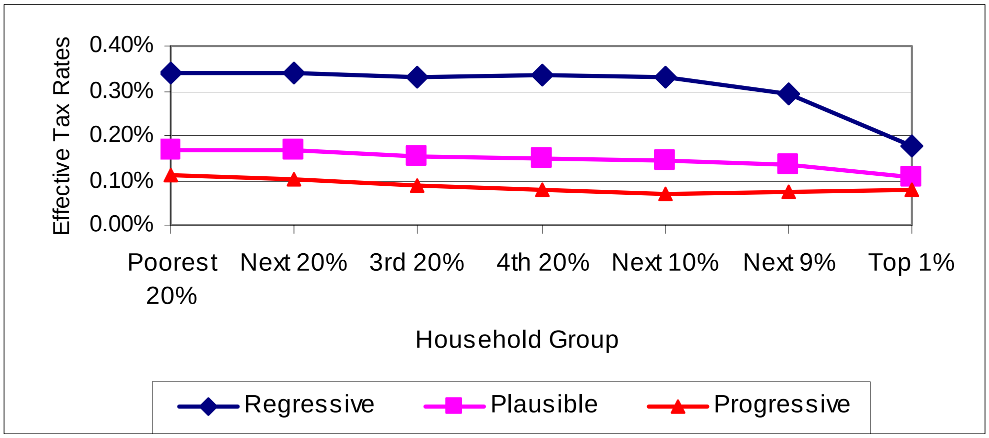
[2] Because household income includes non-taxable sources of income, the effective tax rate of any particular tax should not to be confused with statutory tax rates.

The dashed line shows the tax incidence after $61 million in earned income tax credits is taken into account. The earned income tax credit equals a percentage of the federal earned income tax credit, depending on the number of children in the household.[3] The credit phased out at household income equal to $32,121. The progressivity of the tax structure was enhanced by the credit: whereas the poorest 20% of households received a refund due to the earned income tax credit, the burden was unchanged for the top 40% of households.

2. Corporate Income and Franchise Tax

Corporate income and franchise taxes amounted to $471.8 million in 2001, equal to 3.1% of all state and local taxes. Chart V.2 shows the incidence of the corporate income tax across all income levels.

CHART V.2
INCIDENCE OF CORPORATE INCOME AND FRANCHISE TAX



Under all variants, the tax is characterized by low effective tax rates and a proportional distribution for 90% of households, as reflected in the flat curve across all variants. The variants differ with respect to the effective tax rate. Under the regressive variant, the average effective tax rate for 90% of households was around 0.34%. Under this variant, the corporate tax was regressive for the 10% of households with the highest income, particularly for the top 1% of households who paid 0.17% of their income in corporate taxes.

Under the plausible variant, the tax was roughly proportional for 99% of households, with households paying between 0.14% and 0.17% of their income in corporate taxes. The tax was regressive for the top 1% of households; these households paid 0.11% of their income in corporate taxes.

[3] The other refundable credits, including the farmland preservation credit, and the homestead credit and farmland tax relief credit are claimed on the individual income tax return, and as such also reduce income taxes for qualifying claimants; however, because they serve to provide property tax relief, the effect of these credits are shown in the property tax analysis.

The tax was proportional for all households under the progressive variant, with the effective tax rate ranging between 0.07% and 0.11%.

3. Sales Tax

State and local sales taxes amounted to $3,741.7 billion in 2001, or 24.7% of all taxes studied. Of this amount, consumers paid 67% in direct consumer purchases, and business purchases accounted for the remaining 33%.

Chart V.3 shows the incidence of the sales tax across households. Overall, Wisconsin households paid between 2.4% and 3% of their income on sales taxes, with most of this being paid on sales taxes on direct consumer purchases (2.1%). Between 0.3% and 0.9% were paid on business sales taxes either through higher prices of goods consumed by the households or lower wages earned by the households.[4]

CHART V.3
INCIDENCE OF SALES AND USE TAXES

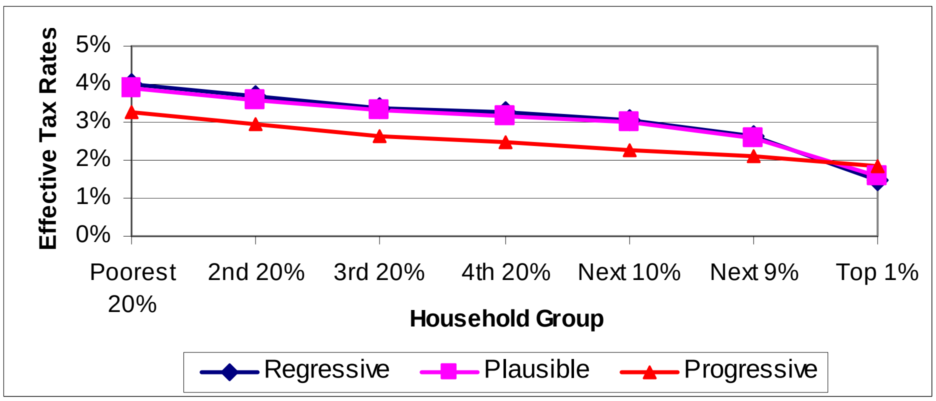


Chart V.3 shows that the sales and use tax was regressive over all income groups. Poorer households expended a higher share of their income in sales taxes than higher-income households. The poorest household quintile paid between 3.3% and 4.0% of its income in sales taxes, whereas the top 1% of households paid between 1.5% and 1.9% of their income in sales taxes.

Some tax incidence scholars have argued that the sales tax is typically regressive when analyzed with respect to income at a fixed point in time. However, the sales tax is less regressive from the perspective of lifetime income. This argument rests on the assertion that consumption over a lifetime varies less than income. A household experiencing a financial set-back in a given year may continue to spend at levels corresponding to its income in prior years, particularly if it anticipates a higher income in future years. Thus, an analysis over a given year may overstate the lifetime burden for lower-income households and therefore overstate the long-term regressivity of the sales tax.[5]

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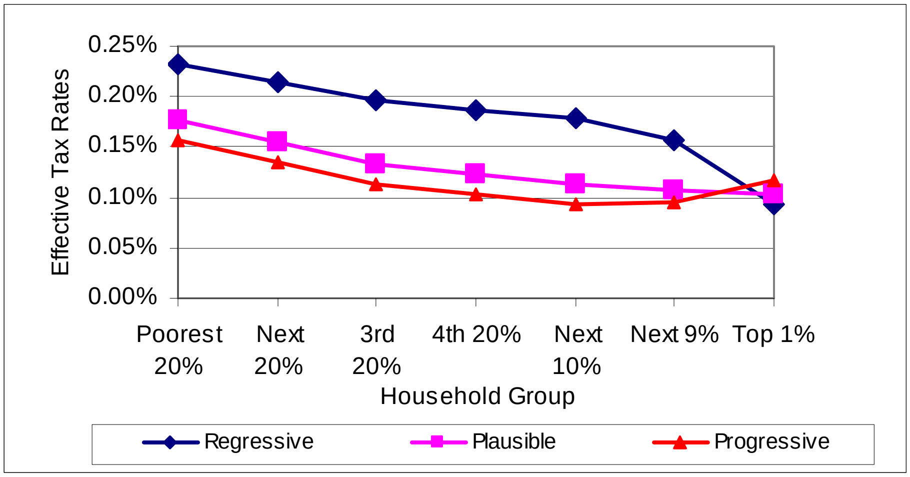
[4] See Appendix 8 for the incidence of each business tax.

[5] See Fullerton and Lim Rogers (1993). Chernick and Reschovsky (2000) test whether regressivity of gas taxes declines when measured over an 11-year period compared to a single year. They find that regressivity declined when analyzing over a longer period, but that the tax remained regressive. They attribute this to limited income mobility over the period for most of the individuals in their sample.

4. Utility Taxes

Utility taxes amounted to $234.7 million or 1.6% of all state and local taxes in 2001. Of this amount, residential users paid an estimated 42% of the total, and business users paid 58%. Overall, Wisconsin households paid between 0.11% and 0.17% of their income on utility taxes: about 0.08% of their income was spent on utility taxes for residential utilities and between 0.02% and 0.09% for business utilities. While the tax represented a small fraction of total taxes and a small share of household income, it was regressive for 99% of households. Chart V.4 shows that the poorest households paid between 0.16% and 0.23% of their income in utility taxes, while the highest-income households paid between 0.09% and 0.12%.

CHART V.4
INCIDENCE OF UTILITY TAXES



5. Property Taxes

In 2001, property taxes totaled $6.4 billion. These taxes included $3.9 billion of property taxes on owner-occupied homes, an estimated $1.6 billion of property taxes on rental housing, and $0.9 billion of property taxes on business property.[6] Together, these taxes accounted for 41.7% of all state and local taxes. Since the residential property tax on owner-occupied and rental housing made up over 85% of all property taxes, the total property tax incidence is largely the result of the residential housing property tax.

As discussed earlier, the owners of taxable property are liable for the payment of taxes. However, under certain conditions, property owners may shift the burden of the tax to others. It is widely accepted in tax incidence literature that taxes imposed on homeowners cannot be shifted, and the homeowner bears the property tax burden.[7] On the other hand, there is a long debate over who bears the property tax on rental housing. While landlords are responsible for paying the taxes on their rental property, they may

[6] Property taxes on owner-occupied housing include property taxes on recreational homes.
[7] Since homeowners are both owners and consumers of housing, they will bear the tax regardless of whether the tax is shifted or not. See Browning and Johnson (1979), Phares (1980), and Pechman (1985).

be able to raise their rents to cover all or part of the property tax, and thus shift the property tax burden of rental housing to renters.

The study employs three shifting assumptions designed to capture the full range of shifting possibilities regarding the property taxes on rental residential property. The regressive variant makes the assumption that landlords shifted the entire property tax to renters in the form of higher rent. The progressive variant makes the opposite assumption, namely that landlords could not raise rents and therefore bore the entire tax. Under the plausible variant, the landlord was able to raise rents to cover only some of the property tax on its occupied rental properties. Landlords are assumed to bear the property tax burden for unoccupied rental housing under all variants.

Table V.4 compares the share of the tax borne by Wisconsin landlords and renters under the three variants.[8]

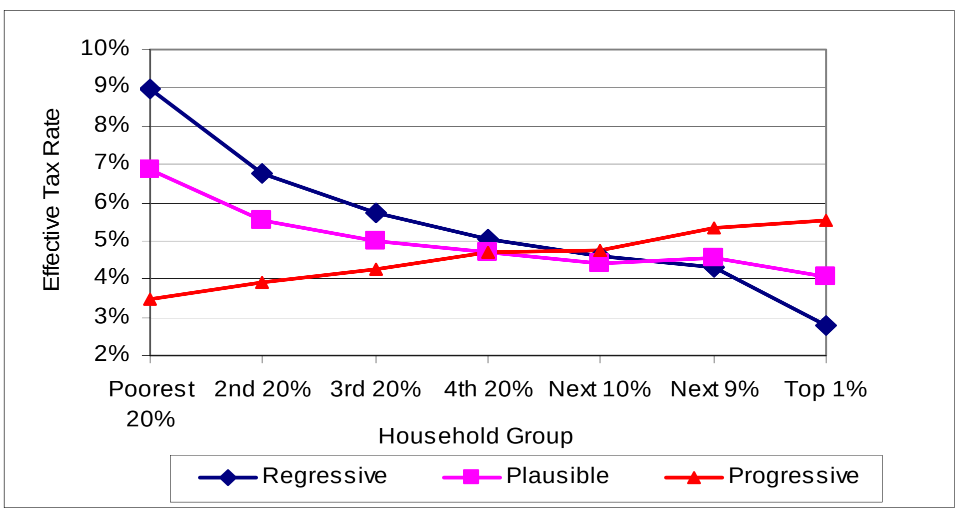
TABLE V.4
DISTRIBUTION OF PROPERTY TAXES ON RENTAL HOUSING*

Shifting Assumptions:	Landlords' Share	Renters' Share
Regressive Variant	25%	75%
Plausible Variant	51%	49%
Progressive Variant	100%	0%

*Excludes approximately $108 million paid by non-residents.

Overall, Wisconsin residents paid around 4.85% of their income in property taxes: 4.5% of their income was paid on property taxes on residential property and 0.35% on business property. However, Chart V.5 shows significant differences in the tax burden across households.

CHART V.5
INCIDENCE OF PROPERTY TAXES*



***Before homestead, farmland preservation and farmland tax relief credits.**

[8] The table reports the distribution of property taxes on rental housing borne by Wisconsin residents. See Chapter III for details on the assumptions used for rental property taxes. The distribution of rental housing property taxes reported in Table III.9 includes taxes borne by non-Wisconsin residents.

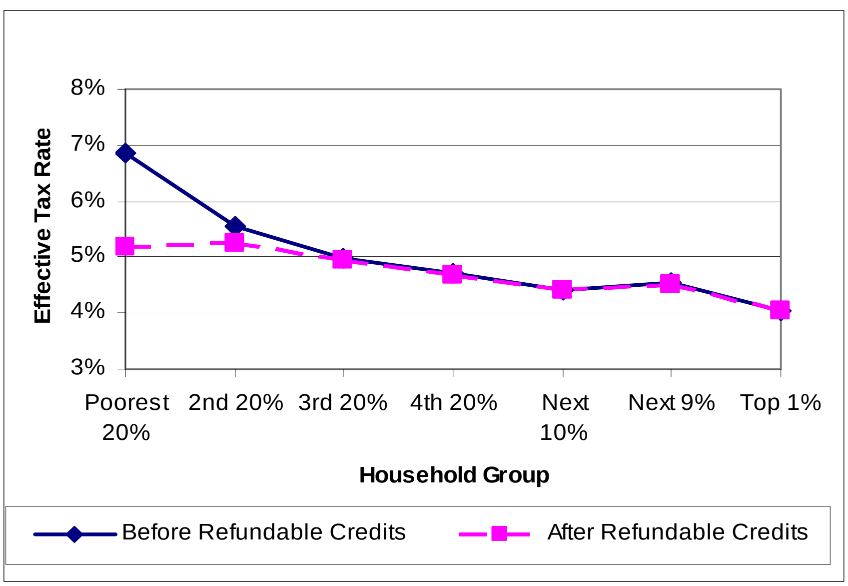
Under the regressive and plausible variants, property taxes were regressive for all income groups. The shape of the incidence curve is similar under both variants, except that the effective tax rates were lower under the plausible variant for 90% of households. Under these variants, the poorest 20% of households paid between 6.9% and 9% of their income in residential property taxes. In contrast, the top 1% of households paid between 2.8% and 4% of their income on residential property taxes.

Under the progressive variant, residential property taxes were slightly progressive for all households, with the poorest households paying 3.5% of their income in property taxes and the highest-income households paying 5.6%. This result is driven by the assumption that none of the property tax on rental housing is borne by renters.

As mentioned earlier, Wisconsin provides refundable income tax credits designed to provide property tax relief based on a household's property taxes (or rent-equivalent) and income. These credits include the homestead credit, farmland preservation credit and farmland tax relief credit. These credits totaled $120.4 million in 2001. Except for the farmland tax relief credit, these credits provide direct tax relief through a circuit-breaker mechanism. The underlying principle of a circuit breaker is that taxes exceeding a certain percentage of a taxpayer's income are considered excessive and should be offset at least in part with state-funded assistance. While these credits are technically income tax credits because they are claimed against the individual income tax, their effect on property taxes can be shown.

Charts V.6 shows the effect of the property tax credits under the plausible variant. As intended, the credits significantly reduced the property tax burden for low-income households. The credits reduced the effective tax rate for the poorest 20% from 6.9% to 5.2%. While the refundable credits significantly reduced the regressivity of the property tax for the poorest households, they did not completely eliminate the regressivity of the property tax.

CHART V.6
PROPERTY TAX INCIDENCE, PLAUSIBLE VARIANT
BEFORE AND AFTER REFUNDABLE TAX CREDITS



The limited effect of these credits relates to several factors. First, it appears that many qualifying households did not apply for the homestead credit. Table V.5 shows the share of renters and homeowners that received the credit by household decile. Since the maximum income allowed under the homestead credit was $24,500, only the lowest four deciles are shown.[9]

TABLE V.5
HOMESTEAD CREDIT RECIPIENTS
HOMEOWNERS AND RENTERS

Household Decile	Homeowners	Renters
Poorest 10%	49.2%	20.5%
2nd 10%	56.9	20.5
3rd 10%	43.2	11.4
4th 10%	18.8	2.7

Among the very poorest homeowners, about half received the credit. Among the poorest renters only 20.5% received the credit. Some persons in these low-income categories may qualify for, but not claim the credit, due to lack of awareness of the credit, difficulty in filing for it, or other reasons.

However, not all households in these deciles qualify for the homestead credit, for a variety of reasons.

For example, some may not be eligible because of living arrangements whereby the household does not pay rent or lives in tax-exempt housing. Others may live in taxed housing and pay rent or property taxes, but their property tax is not excessive.

Consider, for example, a household with income of $18,600, which is about the mid-point of the third lowest income decile. Under the homestead formula, this household would receive a credit only when its property tax, or rent constituting property tax, is more than $932. Households living in low-valued homes in low-tax-rate municipalities (e.g., in a $50,000 home taxes at a rate of $18 per $1,000) or paying rent less than $300 per month would not qualify for the credit.

Further, a household may not claim credit for any property tax or rent for any month in which it receives payments from the Wisconsin Works public assistance program or county relief payments. Receiving assistance for just a few months can reduce property tax or rent equivalent to the point where it is no longer considered excessive, and thus qualifies the household for a credit, under the homestead formula.

Finally, the financial standing of some households in the lowest deciles may be higher than it appears. For example, sole proprietors or partners may be able to claim depreciation and other deductions to lower their income for tax purposes. The homestead credit program recognizes this by requiring claimants to add to household income any amount of depreciation or expensing deductions they used to reduce taxable income.

[9] The current income ceiling remains at $24,500. While the definition of income used in the analysis is different than the homestead definition of income, the fourth decile, which includes households with income less than $27,900, captures the phase-out of income eligibility for the credit.

However, even when these factors are taken into account, the data suggest that participation in the homestead credit program is low among qualifying households. It is estimated that only 43% of qualifying households claimed the credit. [10]

For those households that do participate in the program, the homestead credit may not provide significant property tax relief if the household is "income poor, house rich". These households may reside in a home, the value of which does not correspond to their current income levels. A widow living on a modest social security check living in the long-time family home is an example of such a household. While she may qualify for the homestead credit due to her low income, her property taxes may far exceed the amount of taxes offset under the homestead credit.[11]

Whereas the consumption of most other goods reflect a household's current income, the value of a family's home reflects not only the household's current income but also its past and anticipated future income. Thus, some scholars argue that the property tax on housing is less regressive from the perspective of lifetime income as opposed to annual income. For example, the value of the home of the above-described widow reflects her family's income over time. The property tax on her home may be a high share of her current income, but a much smaller share of her lifetime income.[12]

C. TOTAL STATE AND LOCAL TAXES

Chart V.7 shows the incidence of all state and local taxes across Wisconsin households.

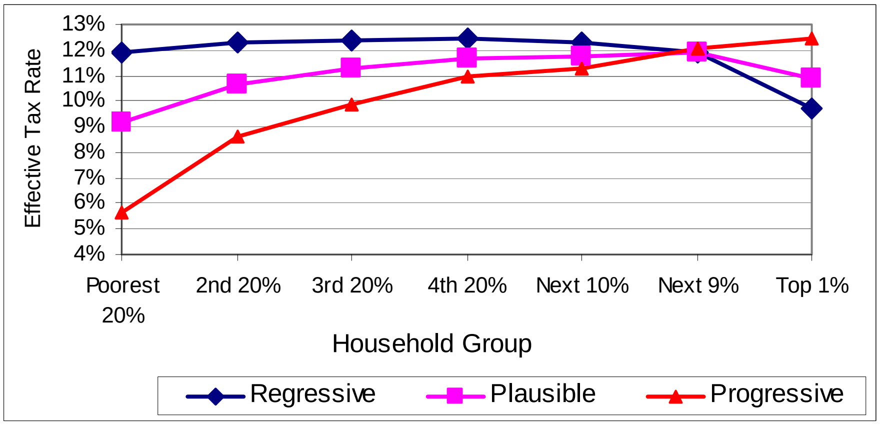
Under the regressive variant, total taxes were mildly progressive for 80% of households and regressive for the 20% of households with the highest income. The poorest households, i.e. those with income below $15,600 paid 11.9% of their income in total taxes. The tax rate increased through the fourth quintile, such that households with income between $44,100 and $69,500 paid an average of 12.4% of income in taxes. Taxes became regressive for households with income over $69,500. Households with income between $69,501 and $93,400 paid 12.3% of income in total state and local taxes; households with income between $93,401 and $254,200 paid 11.9% of income in taxes. The top 1% of households paid 9.7% of income.

[10]This estimate is based on household income as defined for homestead credit purposes and property tax liability or property tax equivalent. For households that did not report property taxes or rent, imputations were required. These imputations are reported in Chapter III. The participation rate for households that did not require imputations, i.e., those households that reported property taxes or tax equivalent, is estimated to be 65%.

[11] The 2001 homestead credit offset 80% of property taxes up to $1,450 in property taxes. This is the same as under current law.

[12] See Youngman (2002) and Fullerton and Rogers (1993). Reschovsky (1993) compares the regressivity of the property tax using annual income and property tax data over a 12-year period. He finds that the use of annual data indeed overstates the regressivity of the property tax; however, he finds that for elderly households, the property tax remains regressive over the longer period.

CHART V.7
INCIDENCE OF ALL WISCONSIN STATE AND LOCAL TAXES, 2001



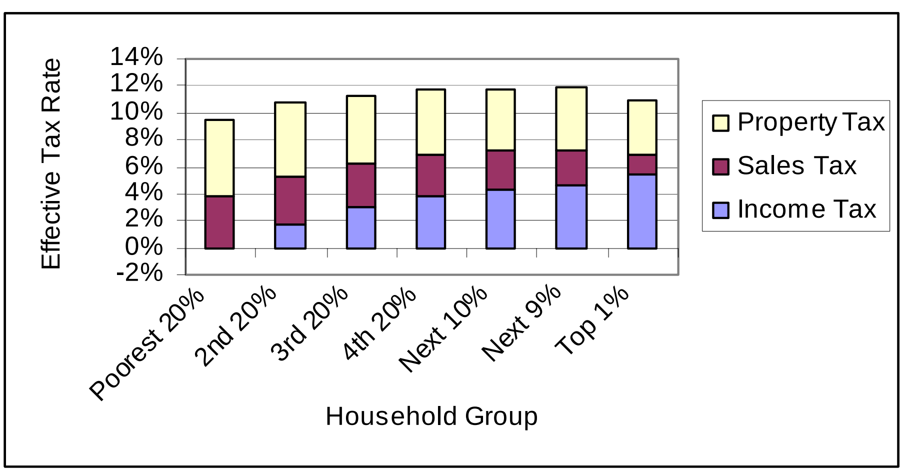
In contrast, the assumptions used in the progressive variant resulted in an overall progressive tax structure with the poorest households paying 5.6% of their income in taxes, while the households with the highest income paid 12.5 %.

Under the plausible variant, the overall tax structure was moderately progressive to proportional for 99% of households. The poorest households paid 9.2% of their income in taxes. Households with income between $93,401 and $254,200 (the 90-99 percentile) paid the highest tax rate equal to 11.9%. The tax rate declined for the top 1% of households to 10.9%.

For 90% of households, the tax burden was highest under the regressive variant and lowest under the progressive variant. This reflects the higher degree of tax shifting to non-residents under the progressive variant relative to the other variants.

Chart V.8 details total state and local taxes by type of tax for household groups under the plausible variant. The chart shows the contribution of each tax to the total tax burden. Property taxes imposed the largest burden for most households, followed by the sales tax. The tax burden of the highest-income households was mainly from the individual income and property taxes.

CHART V.8
WISCONSIN STATE AND LOCAL TAX BURDEN BY TAX TYPE
BY HOUSEHOLD GROUP, 2001



D. OVERALL PROGRESSIVITY

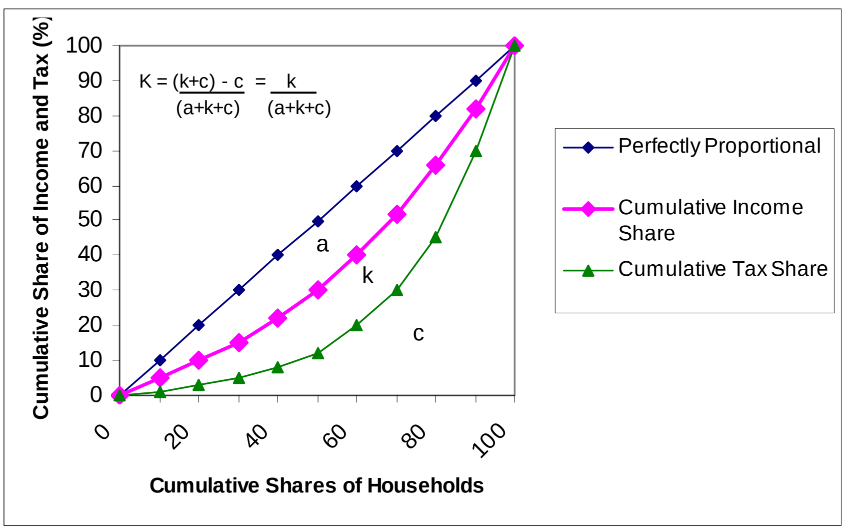
Measuring the tax burden as a percentage of household income allows a comparison of incidence across household groups. However, this does not provide a measure of the overall progressivity or regressivity of a tax.

Several indices have been developed to provide a summary measure of the progressivity or regressivity of taxes. Some indices are adaptations of the Lorenz Curve and the Gini Coefficient of income equality. Others derive from social welfare functions and assumptions about society's aversion to inequity.

This study uses the Kakwani index to measure the progressivity of each tax and of the overall tax structure. Like all progressivity indices, the Kakwani index depends on the distribution of taxes across households as well as the distribution of pre-tax income. The Kakwani index compares the distribution of taxes to the pre-tax income distribution.[13] If the share of taxes borne by higher-income households exceeds their share of total income, then the tax is considered progressive. If the share of total taxes borne by these households is less than their share of total income, then the tax is considered regressive.

Chart V.9 depicts a hypothetical Kakwani index by plotting the cumulative proportion of income and cumulative tax share (vertical axis) against the cumulative percent of households (horizontal axis).[14]

CHART V.9
KAKWANI INDEX - EXAMPLE



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[13] See Greene & Balkan (1987), Kiefer (1984), Iyer and Seetharaman (1997), Seetharaman and Iyer (1995) and Silber (1994) for details on the Kakwani index and other progressivity indices.

[14] Another index commonly used in tax incidence studies is the Suits index. It is similar to the Kakwani index except that it maps the cumulative proportion of a tax against the cumulative proportion of income rather than the cumulative proportion of households. However, because the Suits index does not allow a measure of the effect a tax has on income distribution, this study places more emphasis on the Kakwani index. Suits indices are reported for each tax and for total taxes in Appendix 8.

With respect to income, the 45-degree line represents a perfectly equal income distribution, whereby each household quintile receives exactly 20% of total income. The thick line represents the pre-tax income concentration curve, often referred to as the Lorenz curve. The extent to which this curve sags below the 45-degree line represents the degree of inequity in the distribution of income before taxes. In this example, the poorest 20% of households receive only 15% of total before-tax income. On the other hand, the highest-income quintile received 34% of total income.[15]

The thin line represents the tax concentration curve. A tax curve that is identical to the 45-degree line implies that each population group pays the same share of taxes. A tax concentration curve that sags below the 45-degree line reflects a tax system where the population groups with the lowest income pay a smaller share of taxes than their share of the population and the higher income groups pay a larger share of taxes than their population shares. In both cases, the further the curves are below the diagonal line, income and taxes are more concentrated in the higher income groups.

An indication of progressivity (or regressivity) is obtained by comparing the tax concentration curve to the income concentration curve. As seen in Chart V.9, the Kakwani index, K, measures the area below the income concentration curve (k+c) minus the area below the tax curve (c).

Thus, the area denoted as k measures the area between the income concentration curve and the tax concentration curve. It is measured as a percent of the total area below the 45-degree line (a+k+c). A tax is progressive if the tax concentration curve lies below the income curve, in which case K would be positive. A negative value for K occurs when the tax curve lies above the pre-tax income concentration curve and reflects a regressive tax. If the tax and income curves coincide, K will be zero and reflect a proportional tax. The value of the Kakwani index ranges from -2 to +2; the closer it is to those extremes, the more regressive or progressive a tax or tax structure is judged to be.

Table V.6 reports the Kakwani index for each Wisconsin tax included in the study. Taxes initially imposed on individuals are shown separately from taxes imposed on businesses. For each tax, an overall index is reported which combines both individual and business tax collections.

The sales tax was regressive overall under all variants, ranging from -0.068 to -0.080. The utility tax was also regressive under the variants, ranging from -0.063 to –0.076.

Income taxes were the most progressive tax, as reflected in a Kakwani index ranging from 0.151 to 0.163. This is due to the progressive individual income tax (0.167 under all variants). While the corporate income tax was regressive under all variants, its impact was limited due to the low effective corporate tax rates.

The largest differences across the variants are seen in the property tax index, both in terms of the overall property tax as well as in the indices of the property tax for residential and

[15] By definition, the income concentration curve cannot bow above the 45-degree line for that would indicate that the poorer 20% of households receive more than 20% of total income and the wealthiest 20% receive less than 20% of total income – but then, they would not be the poorest and wealthiest households.

TABLE V.6
KAKWANI INDICES FOR WISCONSIN TAXES
(BEFORE FEDERAL OFFSET)

	Regressive Variant	Plausible Variant	Progressive Variant
Total Sales Taxes	-0.080	-0.077	-0.068
Consumer Purchases	-0.099	-0.099	-0.099
Business Purchases	-0.032	-0.019	0.167
Utility Taxes	-0.076	-0.074	-0.063
Residential	-0.132	-0.132	-0.132
Business	-0.025	0.048	0.167
Property Taxes[1]	-0.121	-0.044	0.057
Residential (including rental housing)	-0.110	-0.054	0.050
Business Property	-0.026	0.098	0.167
Income Taxes[2]	0.151	0.160	0.163
Individual	0.167	0.167	0.167
Corporate	-0.043	-0.043	-0.057
ALL TAXES	-0.013	0.013	0.063

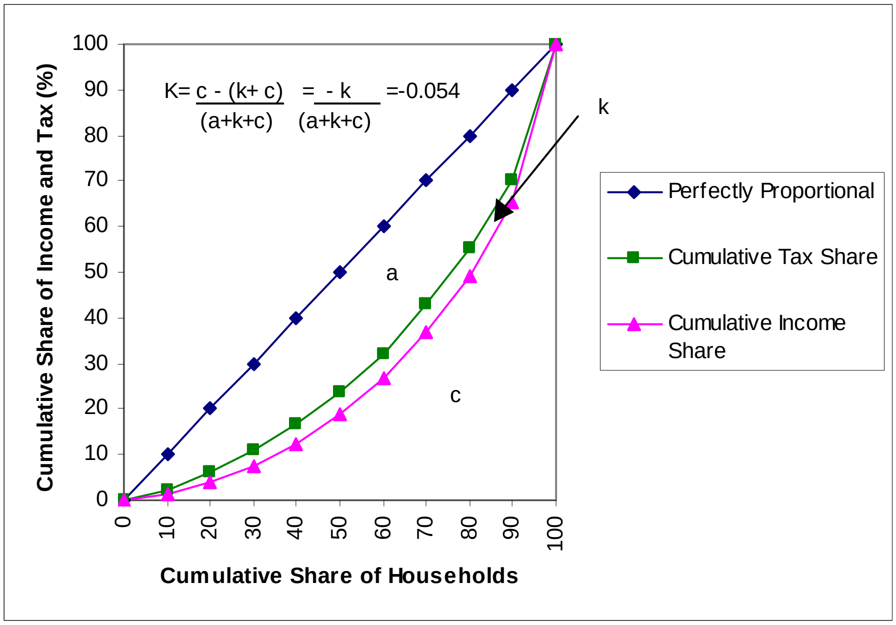
[1] Net of the homestead credit, farmland preservation credit and farmland tax relief credit.
[2] Net of the earned income tax credit.

business property. Under the regressive variant, both residential and business property taxes were regressive, with the combined effect equal to a K index of -0.121.

Property taxes on residential housing were also regressive under the plausible variant, but business property taxes were progressive. However, because residential property taxes accounted for a larger share of property taxes than business property taxes, the regressivity of residential property taxes dominated the overall index. Under this variant, property taxes were regressive overall, with a K index of -0.044. In contrast, both residential and business property taxes were progressive under the progressive variant resulting in a combined property tax K index of 0.057.

Chart V.10 graphically show the Kakwani index of property taxes on residential property under the plausible variant.

CHART V.10
KAKWANI INDEX, RESIDENTIAL PROPERTY TAX
PLAUSIBLE VARIANT



As the graph shows, the tax concentration curve lies above the income concentration curve. Thus, the share of the residential property taxes paid by lower-income households exceeded their share of total income. The Kakwani index is negative, implying a regressive tax.

For the tax structure as a whole, however, the Kakwani index was close to zero under all three variants, implying a proportional tax structure. Thus, it can be argued that regardless of shifting assumption used, the 2001 Wisconsin state and local taxes were somewhat proportional overall. This result is due to the progressivity of the income tax which offset the regressivity of the sales, utility and property taxes.

E. EFFECT OF WISCONSIN TAXES ON INCOME DISTRIBUTION

While the Kakwani index is similar to other tax indices in the measure of progressivity of a tax structure, it has unique mathematical properties that allow consideration of the effect of Wisconsin's tax structure on the income distribution. In other words, K can also be used to compare the income distribution before and after the incidence of a tax.

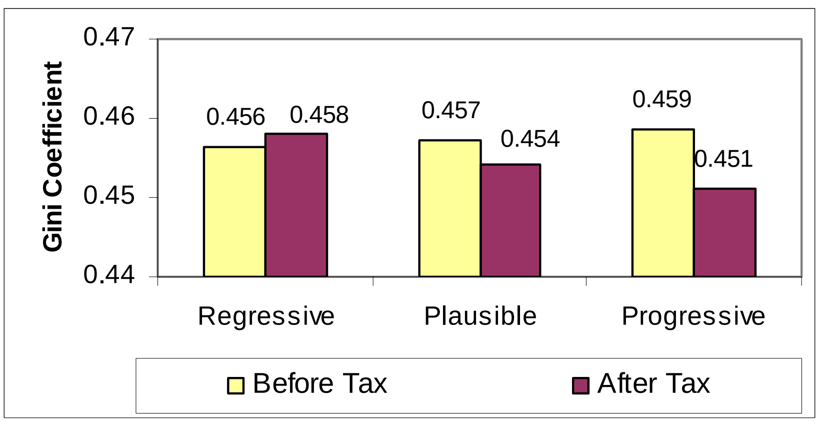
The Gini coefficient is a measure of the equality of income distribution. It is depicted in Chart V.9 (page 55) as the area between the income concentration curve and the 45-degree line (area a) as a percentage of the area below the 45-degree line (a+k+c). The greater the area between the 45-degree line (a perfectly proportional income distribution) and the income concentration curve, the higher the Gini coefficient and greater the income inequality. A tax structure that reduces income inequality would be reflected by a reduction in the Gini coefficient.

The after-tax income distribution is determined not only by the progressivity of a tax structure, as measured by the Kakwani index, but also by the effective tax rate. A highly progressive or regressive tax structure may have little impact on income distribution if the effective tax rate is very low. On the other hand, a tax structure that is only slightly regressive or progressive has little impact on the after-tax income distribution regardless of effective tax rate.

Table V.6 (page 57) revealed that the overall tax structure was roughly proportional. Thus, it can be expected that the after-tax income distribution was not significantly different than the before-tax income distribution.

Chart V.11 shows the Gini coefficient before and after total state and local taxes. While the income distribution worsened slightly under the regressive variant and improved slightly under the plausible and progressive variants, the changes were relatively modest. Thus, it can be concluded that the 2001 tax structure had little effect on the after-tax income distribution regardless of the shifting assumptions used.

CHART V.11
INCOME DISTRIBUTION - BEFORE AND AFTER STATE AND LOCAL TAXES, 2001



F. EFFECT OF THE FEDERAL OFFSET AND FEDERAL EARNED INCOME TAX CREDIT

The findings presented in the previous sections capture the state and local tax burden of Wisconsin residents. No adjustment to the tax burden was made for the federal tax policy affecting state and local taxes.

Federal income tax law allows an itemized deduction for certain state and local taxes paid. State and local taxes that are deductible include the individual income tax and residential (owner-occupied) property taxes, but not the sales tax. Thus, part of the burden of state and local taxes are, in effect, exported to the federal government for those Wisconsin tax filers who itemize their deductions for federal tax purposes.[16] In total, the federal offset reduced

[16] The analysis ignores the increase in the federal tax liability due to higher wages in the absence of a backward shift of business taxes. The analysis also ignores the federal corporate income tax deduction allowed for state and local business taxes.

the state tax burden by approximately $1 billion for those Wisconsin taxpayers who itemized their federal income tax deductions. The value of the deduction depends on the amount of state and local taxes paid and the marginal federal tax rate. The value of the federal deduction for a Wisconsin taxpayer who paid $1,800 in local property taxes and who is subject to a 15% federal marginal tax rate would be $270 ($1,800 x 0.15). Thus, the net Wisconsin property tax burden for this taxpayer is $1,530 ($1,800 - $270).

While the federal offset serves to reduce the state tax burden of Wisconsin taxpayers, it has a regressive influence on the state tax system. This is because the offset is determined by federal marginal income tax rates, which are progressive. Therefore, the tax benefit of itemized deductions increases with income.

There is debate whether the federal offset should be recognized in a tax incidence study. On the one hand, it clearly reduces the tax burden for households that claim itemized deductions for federal income tax purposes. To the extent that the federal offset increases the regressivity of state taxes, it should be included. On the other hand, it can be argued that the federal tax deduction has the effect of raising federal tax rates in order to make up for the foregone revenue. In fiscal year 2002, the total nationwide cost of the state and local tax deduction was $66.3 billion in foregone federal tax revenue.[17] Recognizing this increased federal tax liability has the effect, on average, of reducing the net federal offset to zero.

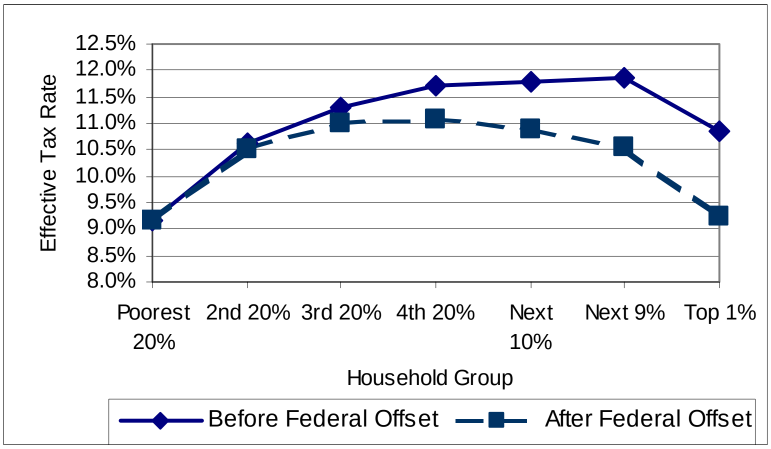
It can be assumed that the federal government does not increase its tax rates to fully compensate for the lost federal tax revenue for several reasons. First, it can be argued that federal tax policy rests primarily on the stabilization of the national economy rather than generating a specific amount of revenue. Second, the federal government could compensate for the lost revenue by either reducing spending or through borrowing or some combination of both. Finally, to the extent that the analysis examines the effect of Wisconsin's state and local taxes, it is reasonable to assume that the effect of the offset for one state has little impact on total federal tax collections.

Charts V.12 shows the effect of the federal tax offset on Wisconsin state and local tax rates under the plausible variant.

As expected, the federal offset has a regressive influence on Wisconsin's tax structure. Before the offset, the tax structure was moderately progressive for 99% of households and regressive for the highest-income households. Adjusting for the offset, the tax was progressive for the poorest 60%, i.e., for households with income below $44,100, proportional through the ninth decile and regressive after that.

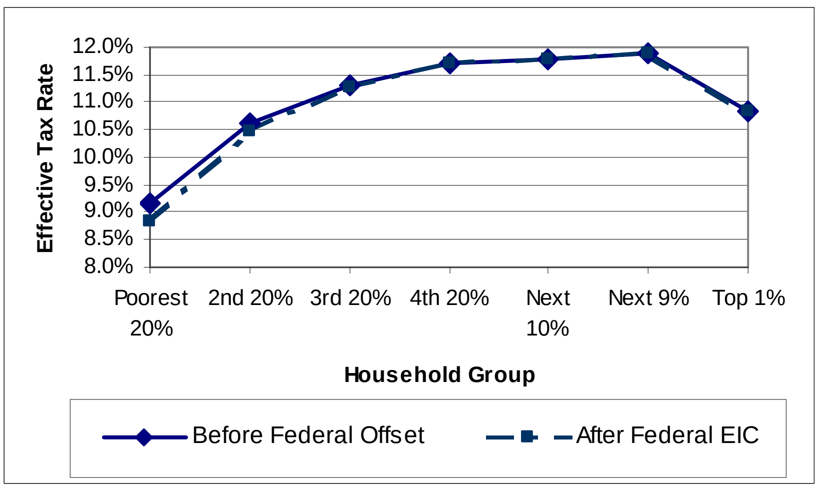
[17] See Joint Committee on Taxation, Estimates of Federal Tax Expenditures for Fiscal Years 2002-2006 (U.S. Government Printing Office, 2002).

CHART V.12
INCIDENCE OF TOTAL STATE AND LOCAL TAXES,
BEFORE AND AFTER FEDERAL OFFSET, PLAUSIBLE VARIANT



While the federal tax offset disproportionately benefits higher-income households, other federal tax policy is targeted to lower-income households. If the analysis were to include the $373.2 million in federal earned income tax credits (EIC) received by Wisconsin households as part of household income, the regressive influence of the federal offset would be somewhat offset.[18] Table V.13 shows the incidence of Wisconsin state and local taxes if the federal EIC is included in household income.

CHART V.13
INCIDENCE OF STATE AND LOCAL TAXES,
INCLUDING FEDERAL EARNED INCOME TAX CREDIT

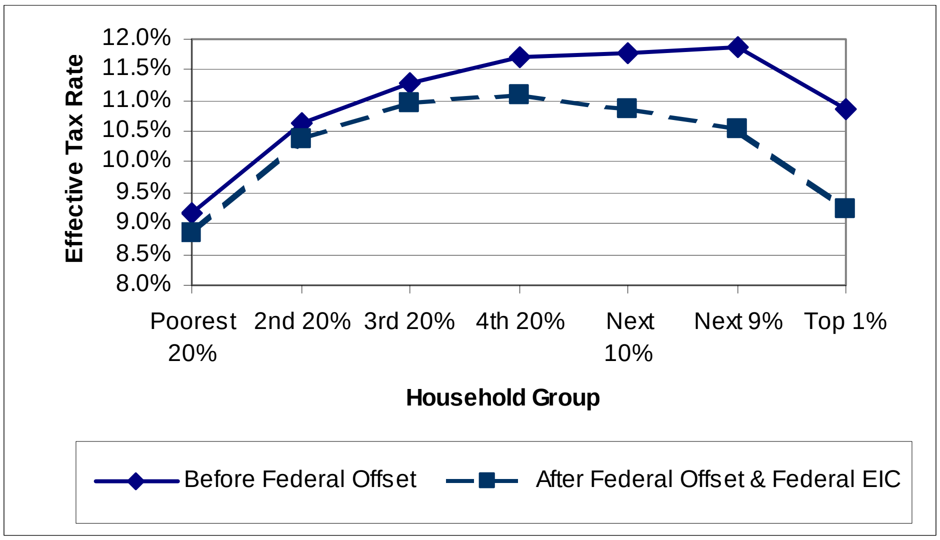


[18]The study treats refundable credits, including the Wisconsin EIC, as reduction of taxes rather than income.

The inclusion of the federal EIC in household income results in a slightly smaller overall tax burden for the poorest 40% of households: the tax burden for poorest 20% decreases from 9.2% to 8.9% of income, while the burden for the next household quintile decreases from 10.6% to 10.5% when the federal EIC is included in income.

Chart V.14 shows the total tax incidence net of both federal tax policies, i.e., the reduction in the tax burden resulting from the federal tax offset and the increase in household income when the federal EIC is included.

CHART V.14
INCIDENCE OF STATE AND LOCAL TAXES
NET OF FEDERAL TAX EFFECTS*



*The tax burden is reduced due to the federal offset and household income is increased due to the federal EIC.

The reduction in the tax burden due to the federal tax offset and the increase in household income due to the federal EIC result in an inverted U-shape to the tax incidence curve, with middle-income households paying the highest share of income in taxes while households with the lowest and highest income levels pay the lowest rates.

The effect of these federal policies on the overall progressivity can be measured by the change in the Kakwani index for all taxes before and after adjusting for federal tax policy. Under the plausible variant, the Kakwani index for all taxes fell from 0.013 before adjusting for the federal effects to -0.004 after taking them into account. Before adjustment for these federal tax policies, Wisconsin's tax structure was mildly progressive; when these policies are taken into account, Wisconsin's tax structure can best be described as proportional, with enhanced progressivity for lower-income households but also enhanced regressivity for higher-income households.

CHAPTER VI
DISTRIBUTION OF TAX BURDENS BY HOUSEHOLD TYPE

A. INTRODUCTION

Chapter V considered the vertical equity of the tax structure, i.e., the extent to which households with greater ability to pay bore a higher burden than poorer households. Horizontal equity, on the other hand, measures the extent to which identical households face the same tax burden.

The study does not compare the burdens across identical households insofar as attributes such as size, sources of income and location are not the same across households. However, data do allow a comparison across different household groups with similar income. In particular, the study compares the tax incidence between renters and homeowners, elderly and non-elderly, and households of different composition.

Except where noted, the assumptions used in the plausible variant are used to measure the tax burdens across these households.

B. RENTERS VS. HOMEOWNERS

Table VI.1 identifies several key differences between renters and homeowners.

As a group, renters were poorer than homeowners. Renters comprised 45% of all households in 2001 but received only 24% of total income. The median household income for renters was $20,800, compared to $53,500 for homeowners. Even though renters bore 16% of all residential property taxes, they received 48% of total homestead credits. Renters also received 75% of the total earned income tax credit.

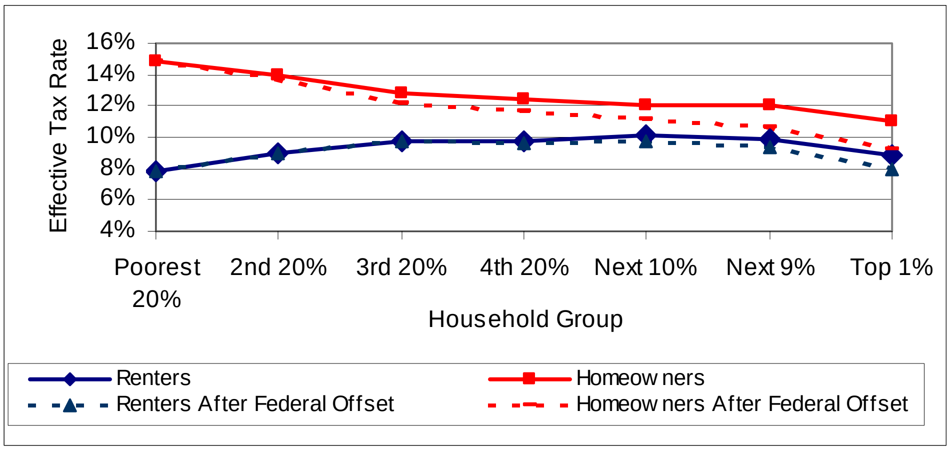
TABLE VI.1
INCOME AND TAXES -
RENTERS VS. HOMEOWNERS

	Renters	Homeowners
Median Household Income	$20,800	$53,500
Average Total Tax Rate	9.3%	12.2%
Share of:		
Total Households	45%	55%
Total Income	24%	76%
Total Residential Property Taxes	16%	84%
Total Homestead Credit	48%	52%
Total Earned Income Tax Credit	75%	25%

Chart VI.1 shows the effective tax rates for all state and local taxes for renters and homeowners net of all refundable credits under the plausible variant.[1] The solid lines show the total tax incidence before the federal offset. The dashed lines show the total tax incidence after the federal offset.

The chart reveals significant differences between renters and homeowners. First, homeowners paid a higher share of their income in taxes across all income levels than did renters. In particular, homeowners in the poorest 40% paid significantly more than renters of similar means. Thus, homeowners with income less than $27,900 paid an average of 14.2% of income in total taxes, compared to renters of similar income who paid an average of 8.6% of income in taxes.

CHART VI.1
INCIDENCE OF TOTAL TAXES, RENTERS VS. HOMEOWNERS
PLAUSIBLE VARIANT



Total taxes were regressive across all income groups for homeowners. In contrast, total taxes were progressive to proportional for all renter households except for the highest-income households. Taxes were regressive for these high-income renters.

The federal offset reduced the tax burden for homeowners beginning in the fourth decile, thereby narrowing the tax rate gap for higher-income households. This is not surprising since federal itemizers tend to be higher-income homeowners. However, the tax rate gap for the poorest 40% of households was unaffected by the federal offset.

While the offset reduced the tax burden for homeowners, it also had the effect of making taxes paid by homeowners more regressive. This is reflected in the steeper after-offset curve for homeowners relative to the before-offset curve.

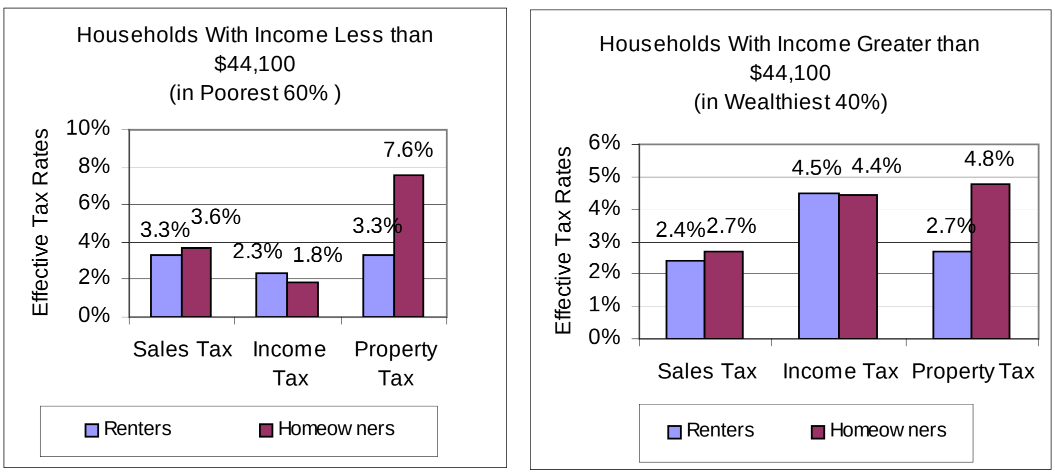
To determine why homeowners faced a higher overall burden, it is necessary to examine the incidence of each tax. Chart VI.2 shows the incidence by tax type for renters and homeowners under the plausible variant. The chart on the left compares the tax

[1] The household groups on the x-axis for the incidence charts in this chapter refer to the **population** household group that the sub-group falls in. For example, the incidence of renters that fall in the top 1% of all households is shown, not the incidence of the top 1% of renters. The number of renter households that fall in the population's top 1% is not the same as the number of owner households that are in the top 1%.

burdens for property, sales and income taxes for renters and homeowners in the poorest 60% of households, i.e., income less than $44,100. The chart on the right shows the same comparison for households with income above $44,100. Both charts show that that renters in general paid slightly more in income taxes as a share of their income, while homeowners paid slightly more in sales taxes as a share of household income.

As the chart shows, the overall tax differences between renters and homeowners were due mainly to the different property tax burdens borne by the two groups. Property taxes borne by homeowners were significantly higher than the property burden of renters at all income levels, but particularly for the lower-income households. Homeowners with income less than $44,100 paid an average of 7.6% of their income in property taxes compared to 3.3% for renters of similar means. For higher-income households, homeowners paid an average of 4.8% of their income in property taxes compared to 2.7% for renters.

CHART VI.2
TAX INCIDENCE BY TAX TYPE, RENTERS VS. HOMEOWNERS
PLAUSIBLE VARIANT



The incidence of the property tax on homeowners is straightforward, since it is typically assumed that property taxes imposed on homeowners cannot be shifted and thus are borne by the homeowner. On the other hand, the property tax on rental housing is subject to much debate. This debate stems from the lack of data needed to empirically measure the incidence of property taxes on rental housing and the assumptions used to make up for this deficiency. The data limitations relate to both the initial impact and ultimate incidence of property taxes on rental housing.

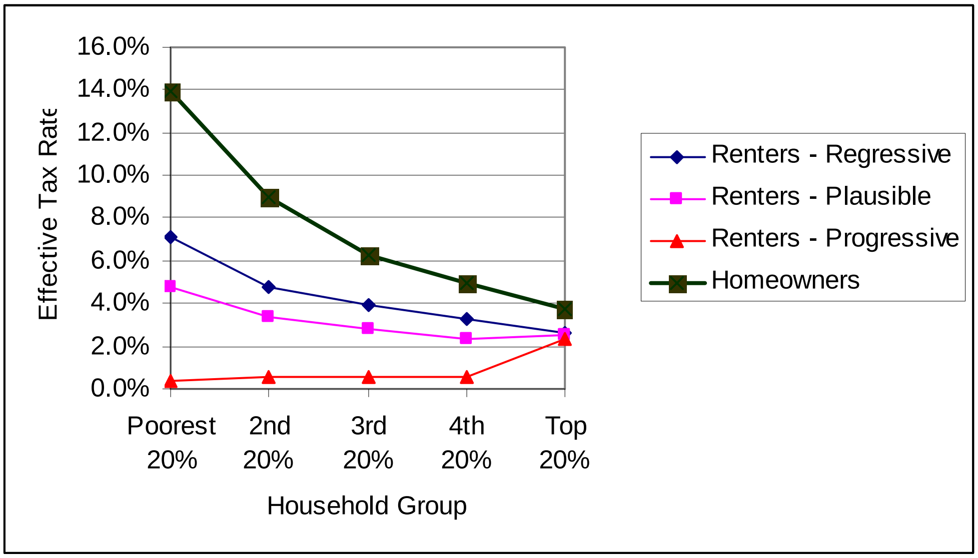
Data do not exist on Wisconsin property taxes paid on rental housing. For property tax purposes, rental housing is valued as commercial property. Data exist on taxes paid on commercial property, but it is not known whether the tax is paid on rental housing or other commercial property such as shopping centers or gas stations. As a result, the property taxes on rental housing must be estimated.[2]

[2] See Appendix 6 for details on the estimation of total property taxes on rental housing.

Once the initial impact is estimated, the final incidence must also be estimated. As detailed in Chapter III, property taxes on rental housing may be shifted to tenants in the form of higher rents. An inherent difficulty in measuring the extent of shifting is that the rent that would have been charged in the absence of a tax is unobserved. Thus, the extent to which rents are raised due to the imposition of a tax must be estimated. While this is the case for any tax that is shifted, the difficulty is particularly acute for rental housing because: (1) the property tax on rental housing and therefore its incidence is much higher than any other business tax; and (2) inter-jurisdictional differences affect the market for rental housing more than other business sectors. Where vacancies are high or the stock of rental housing is high, landlords are more limited in their ability to raise rents to cover the property tax than in more competitive markets where vacancies are low or the housing stock is limited.[3] Thus, one set of shifting assumptions for rental housing property taxes may be more representative of some areas than others.

Chart VI.3 shows the importance of the shifting assumptions used for the property tax on rental housing.

CHART VI.3
INCIDENCE OF RESIDENTIAL PROPERTY TAXES,
HOMEOWNERS VS. RENTERS, UNDER THREE VARIANTS

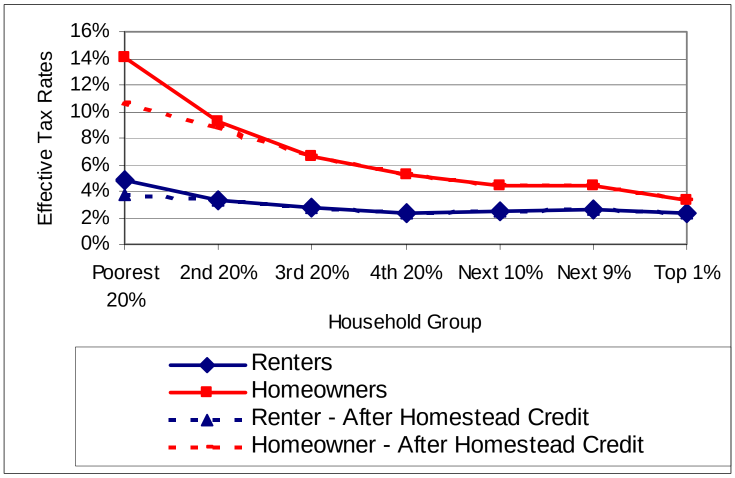


The top curve shows the incidence of the property tax on homeowners. The lower three curves show the incidence of the property tax on rental housing under the three different shifting assumptions. As expected, when the property tax is assumed to be borne completely by renters (regressive variant), the tax burden is higher and more regressive than when landlords bear some of the tax (plausible variant) or the entire tax (progressive variant). However, regardless of the shifting assumptions made for rental housing, homeowners across all income levels paid a higher share of their income in residential property taxes than renters. The disparity between the two groups was extreme at the lower income levels.

[3] See Carroll and Yinger (1994) for other housing attributes that affect the ability of landlords to shift taxes to tenants.

Chart VI.4 compares the property taxes paid by homeowners and renters before and after the homestead credit under the plausible variant. The solid lines show the tax burden of residential property taxes before the homestead credit. The dashed lines show the burden after the credit.

CHART VI.4
INCIDENCE OF RESIDENTIAL PROPERTY TAXES AFTER THE HOMESTEAD CREDIT, RENTERS VS. HOMEOWNERS, PLAUSIBLE VARIANT



The homestead credit reduced the property tax burden for both homeowners and renters in the poorest household group; however the disparity between owners and renters remained. After the homestead credit, the poorest homeowners paid 10.6% of their income in housing property taxes, compared to 3.7% for the poorest renters.

The high property tax burden for the poorest homeowners suggests that poor households own homes the values of which do not correspond to their current income level. This may be due to several factors. First, a household's income in a given year may not represent its true economic position. A household may have a low income in a particular year due to large business or capital losses or large business expenses such as depreciation. In such a case, this household may report property taxes or rent that constitute a disproportionately large share of their 2001 income thereby generating large property tax burdens. These types of households either anticipate a return to a higher income in future years or may, through tax planning, never show an income that represents their true economic position.

Second, household income in a given year may represent a household's true current economic position but not its economic position over a lifetime. As discussed in Chapter V, the tax burden of a widow living on a modest social security check living in the long-time family home may correspond to her long-term income, rather than her current income. The homestead credit does not provide significant property tax relief for these types of households since their property taxes exceed the taxes that are offset by the homestead credit. To the extent that homeowners are more likely than renters to remain in a home that does not correspond to their current income, the "house rich, income poor" situation is more likely to occur among homeowners.[4]

While the rate differences between renters and owners were dramatic, it is important to recognize that there were far fewer homeowners in the bottom 40% of income than renters. Less than 20% of all homeowner households were in the poorest 40% (income below $27,900). In contrast, 65% of renter households had income less than $27,900.

The differences between homeowners and renters is not as great when comparing their relative tax burden, i.e., their tax burdens relative to their share of income. Table VI.2 reports the Kakwani index for residential property taxes and total taxes for renters and homeowners.

TABLE VI.2
KAKWANI INDEX: RENTERS VS. HOMEOWNERS

	Renters	Homeowners
Residential Property Taxes	-0.140	-0.147
Total State and Local Taxes		
Before Federal Offset	0.029	-0.0278
After Federal Offset	0.022	-0.049

The regressivity of the residential property tax is similar for both renters (-0.140) and homeowners (-0.147). However, the overall tax structure for renters was mildly progressive (0.029), while the overall structure for homeowners was mildly regressive (-0.0278). The progressive influence of the refundable credits had a greater effect on the overall tax burden for renters than for homeowners. This is not surprising to the extent that these credits affect the taxes for households in the lowest four income deciles. Since renters, as a group, tended to have lower incomes than homeowners, they captured a large share of the homestead and earned income tax credits and were thus able to offset more of their tax burden through the credits.

The federal offset had a small impact on the total progressivity of the tax structure for renters. Since renters had lower income and had no property taxes to claim as an itemized deduction, they were less likely to itemize. Thus, the federal offset had a minor effect for renters. Since homeowners, as a group, had higher income, they benefited the most from the federal offset. As a result, the regressive influence of the federal offset on state taxes is larger for homeowners.

C. ELDERLY VS. NON-ELDERLY

To explore equity issues by age of households, households are considered elderly if the head of household was 65 or older.

Table VI.3 identifies the differences between elderly and non-elderly households. Seventy-six percent of households were non-elderly. The median income of these

[4]As discussed in Reschovsky (1993), there may be a psychological cost of moving from a home owned by the household, particularly for elderly households that have lived in the home for many years.

households was $39,400. These households received 82.5% of total income and bore 83.2% of total taxes. Elderly households had a median income of $23,100; they received 17.5% of total income and bore 16.8% of total taxes.

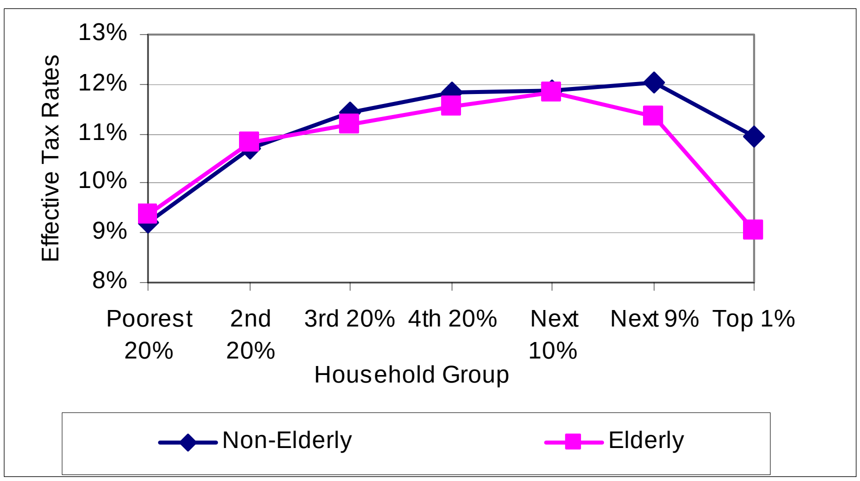
TABLE VI.3
INCOME AND TAXES -
NON-ELDERLY HOUSEHOLDS VS.
ELDERLY HOUSEHOLDS

	Non-Elderly	Elderly
Median Household Income	$39,400	$23,100
Average Total Tax Rate	11.6%	11.0%
Share of:		
Total Households	76.3%	23.7%
Total Income	82.5%	17.5%
Total Tax	83.2%	16.8%
Kakwani Index - All Taxes		
Before Federal Offset	0.012	-0.014
After Federal Offset	-0.009	-0.001

Chart VI.5 shows the tax rates by household group for elderly and non-elderly households.

The tax rates were similar for 90% of households, i.e., and households with income less than $93,400, while the highest-income non-elderly households faced a higher tax burden than did non-elderly households. However, the differences between elderly and non-elderly households in the top 10% of households disappear after taking the federal offset into account.

CHART VI.5
INCIDENCE OF TOTAL TAXES (BEFORE FEDERAL OFFSET)
ELDERLY VS. NON-ELDERLY HOUSEHOLDS



As reported in Table VI.3, the Kakwani index of total taxes for both non-elderly households and elderly households was close to zero after the federal offset, implying a proportional to slightly regressive tax structure.

While the total tax incidence was similar for elderly and non-elderly households, elderly households faced a higher residential property tax burden than non-elderly households; except for the poorest 20%, elderly homeowners and renters paid roughly 2% more of their income in property taxes than did non-elderly households.[5] This may be attributable to lower mobility of elderly households, which keeps them in homes, the value of which does not correspond to their current income. It may also reflect locational differences between elderly and non-elderly households, whereby elderly households live in higher-property tax areas compared to non-elderly households.

On the other hand, the individual income tax and sales tax burdens were lower for elderly households than for non-elderly households of similar means. The lower income tax burden for elderly households can be attributed to the higher share of the elderly's income from non-taxable sources. Approximately 39% of the income of elderly households came from non-taxable sources compared to less than 2% for non-elderly households. The amount of taxable income of elderly households was further reduced by an additional $250 in personal exemptions available to tax-filers over 64; elderly spouses also received $250 more in personal exemptions.

D. HOUSEHOLD COMPOSITION

1. All Households

To determine whether household composition affects tax incidence, households are grouped into one of the following groups: single, (single) heads of households with children under 18, married couples with no children, and married couples with children under 18.

Table VI.4 compares household income and taxes for households of different composition.

TABLE VI.4
INCOME AND TAX BURDEN BY HOUSEHOLD COMPOSITION

	Single	Head of Household	Married w/No Children	Married w/Children
Median Income	$21,264	$22,968	$57,209	$66,805
Average Effective Tax Rate	11.2%	11.0%	11.5%	11.8%
Share of Total				
Households	46%	10%	22%	22%
Total Income	25%	5%	32%	37%
Total Taxes	24%	5%	32%	38%

[5] The poorest elderly households paid a smaller share of their income in residential property taxes than non-elderly households. For households with income greater than $15,600, elderly homeowners paid 6.4% of their income in residential property taxes compared to 4.5% for non-elderly homeowners; elderly renters paid 4.7% compared to 2.4% for non-elderly renters.

Single people had lower household income than married couples, regardless of the presence of children. Single households, with and without children, accounted for 56% of all households and had a median income between $21,300 and $23,000. They received 30% of income and bore 29% of taxes.

Married couples accounted for 44% of all households, with half of these households without children and half with children. These households had a median income between $57,200 and $66,800. Married couples, with and without children, received 69% of total income and bore 70% of all taxes.

Thus, while the distribution of income was unequal between single and married households, the share of taxes were roughly the same as the share of income for each household type.

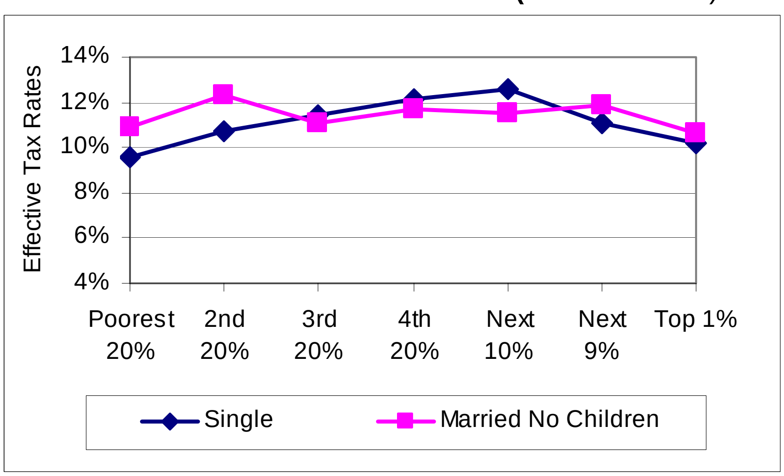
The average effective tax rates for all state and local taxes were roughly the same for all household types, ranging from 11% to 11.8% of total income.

The tax burdens of households with income greater than $27,900 were roughly comparable, regardless of household composition. However, for poorer households, the tax burdens differed significantly depending on marital status and the presence of children. Among the poorest households, married households paid a higher share of their income in taxes than single households of similar means, regardless of the presence of children.

2. Marital Status

Chart VI.6 compares the tax incidence of married and single households without children. Taxes shown are before the federal offset.

CHART VI.6
INCIDENCE OF TOTAL TAXES
(BEFORE FEDERAL OFFSET)
SINGLE VS MARRIED HOUSEHOLDS (NO CHILDREN)



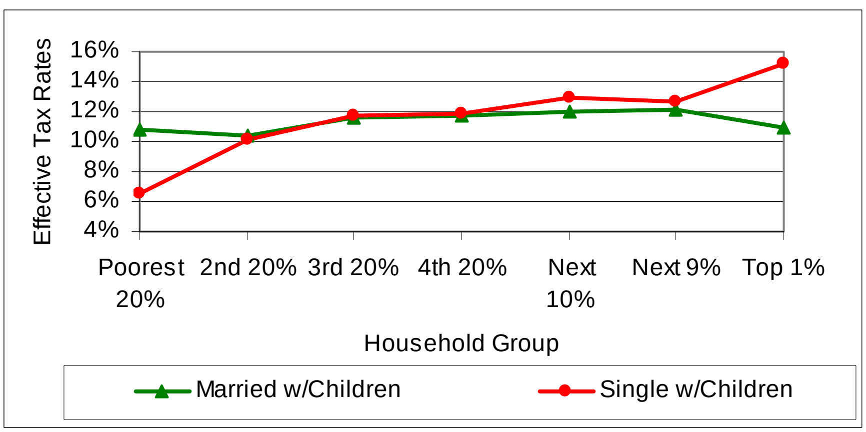
The tax structure was progressive for single households for 90% of households: households with income below $15,600 paid 9.6% of income in taxes, while households with income between $69,500 and $93,400 paid 12.6%. Taxes on the highest-income single households were regressive with the top 1% paying 10.2% of income in taxes.

For married couples with no children, the tax structure was proportional for households with income between $27,900 and less than $254,200. However, married households in the second quintile, i.e., with income between $15,601 and $27,900 paid the highest share of income in taxes than most other households. These households paid 12.4% of income in taxes. These households had a high degree of homeownership (71%) and a high net property tax burden. Whereas some households in this quintile received the homestead credit, the credit reduced the property tax burden by less than 1% for homeowners in this quintile overall. This is not surprising since the income of many of these households exceeded the maximum income allowed under the homestead credit.[6]

For higher-income married households, taxes were between 11.1% to 11.8% of income. The effective tax rate for married households with no children in the top 1% was 10.6%.

Chart VI.7 shows the incidence of taxes before the federal offset for households with children.

CHART VI.7
INCIDENCE OF TOTAL TAXES
(BEFORE FEDERAL OFFSET)
HEADS OF HOUSEHOLD VS. MARRIED COUPLES WITH CHILDREN



[6] Households in the second quintile had income between $15,600 and $27,900. The maximum income allowed under the homestead credit was $24,500. While the definition of income used in the analysis is different than the homestead definition of income, this quintile captures the phase-out of income eligibility for the credit.

Single heads of households faced the most progressive tax of all household types. The poorest households paid 6.6% of their income in total taxes, while the top quintile paid 13.2%.[7]

Taxes on married households with children were slightly progressive. The poorest of these households paid 10.8% of their income in taxes. Taxes on the higher-income households ranged between 11.6% and 12.1% of income. The married households with children in the top 1% paid slightly less in taxes (11%).

Among poor households, single heads of households with children paid a significantly smaller share of their income (6.6%) than did married households with children (10.8%). This difference is largely attributable to the property tax burden. The poorest married households faced a higher property tax burden than single households, whether or not the households were homeowners or renters.

Poor married homeowners with children, in particular, paid a large share of their income in property taxes. While the homestead credit significantly reduced the property taxes for married homeowners, their net property tax burden (11.9%) was still higher than for heads of household who owned their home (9.4%).

The higher tax burden for married households may relate to household size. The poorest married homeowners had, on average, two more people in the household (one additional adult and one additional child) than heads of household who owned their homes. This suggests that the larger property tax burden of poor married households may result from greater housing needs.

Among poor renters, married households also paid a higher share of income in net property taxes (6.7%) than heads of household (4.3%). Poor married renters had, on average 1.25 additional household members than poor single households with children. Similar to homeowners, this suggests that married renters may face a greater property tax burden due to greater housing needs.

3. Presence of Children

Among poor single households, the households without children paid a higher share of their income in taxes than did households with children. The poorest single households with no children paid an average 9.6% of total income in taxes, while single households with children paid 6.6%. The lower tax burden of households with children can be attributed to larger standard deductions, personal exemptions, and the earned income tax credit available to single households with children relative to single households without children.

Similarly, among poor married households, households without children faced a higher tax burden relative to the burden of households with children. Married couples with children had an average effective tax rate of 10.1% compared to 12.4% for married couples with no children. Again, the lower tax burden of households with

[7] The wealthiest 1% of heads of households paid 15.1% of their income in taxes; however, this result is based on the very few households in this group (278 out of 236,000 heads of households) and thus not statistically valid.

children can be attributed to larger number of personal exemptions as well as the earned income tax credit available to households with children.

Table VI.5 reports the Kakwani index by household type.

TABLE VI.5
KAKWANI INDEX – ALL TAXES
BY HOUSEHOLD COMPOSITION

Kakwani Index	Single	Head of Household	Married w/No Children	Married w/Children
Before Federal Offset	0.031	0.081	0.000	0.005
After Federal Offset	0.015	0.068	-0.021	-0.016

As seen in the earlier charts, heads of households (single people with children) faced the most progressive tax structure of all households, with a Kakwani index of 0.081. The Kakwani index for single people without children was 0.031, indicating a slightly progressive structure. The federal offset reduced the progressivity of taxes on single households; however, they remained progressive, particularly for single households with children.

Before the federal offset, taxes were proportional for married households. After the federal offset, taxes were slightly regressive for married couples.

CHAPTER VII
SUMMARY AND AREAS OF FUTURE RESEARCH

A. SUMMARY

The objective of this study was to measure the distribution of $15.1 billion of state and local taxes collected in 2001. To the extent that few major changes have occurred in Wisconsin tax law since then, the study reflects Wisconsin's current tax structure.[1] Major findings of the study include the following:

- Overall, the Wisconsin tax structure is slightly progressive to proportional for 90% of Wisconsin households, regardless of shifting assumptions.
- The sales, property and utility taxes are regressive for most households. The property tax places the largest burden on most households, particularly low-income households.
- The corporate income and franchise tax is proportional, and the burden of this tax is low at all income levels.
- The individual income tax is progressive across all households, and the progressivity of this tax offsets the regressivity of the property and sales taxes.
- Refundable tax credits increase the progressivity of the Wisconsin tax structure. Notably, the earned income tax credit makes the individual income tax sharply progressive at low-income levels and the Homestead credit sharply reduces, though it does not eliminate, the regressivity of the property tax for low-income homeowners and renters. Participation in the homestead credit, however, appears to be quite low (43%).
- Renters face lower and more progressive tax burdens than homeowners; similarly, single households face lower and more progressive burdens than married households. On the other hand, horizontal equity is achieved between elderly and non-elderly households.

B. AREAS OF FUTURE RESEARCH

While the study estimates the incidence of Wisconsin's current level of taxes, its findings cannot be used to draw conclusions about incremental tax changes, since the incidence of an incremental change of a tax may not be the same as the incidence of an existing tax. For instance, business owners may bear the burden of an existing tax, but be able to

[1] Changes in tax law since 2001, described in further detail in Chapter II, include a utility tax exemption for hub airlines (2001), adoption of federal pension, deferred compensation and individual retirement account law changes (2002), and enactment of a dairy investment credit (2004-2009). In addition, Wisconsin will phase in singles sales factor apportionment of net income subject to the corporate income and franchise tax purposes between 2006 and 2008, and will provide a sales tax exemption for fuel and electricity used in manufacturing, repealing the current income and franchise tax credit for sales taxes on these fuels, in 2006.

entirely shift an increase in that tax to workers or consumers if the resulting effective tax rate is higher than the national average.

However, the tax incidence model may be useful for evaluating existing features of Wisconsin's tax structure, for example, the distributional impact of existing tax exemptions, deductions and credits, or the effectiveness of the current earned income tax credit in lifting the working poor out of poverty.

Other areas to consider for further development of the tax incidence model include the following:

- Include more taxes in the analysis. In particular, the incidence of the cigarette, alcohol beverage, motor fuels and other excise taxes and of the estate tax can be explored.

- Include additional sources of income. The study did not include social security insurance payments and child support. While data limitations preclude actual observed amounts, imputations can be developed to allow inclusion of these important income sources.

- Refine consumption imputations. The study used data from the Consumer Expenditure Survey (CES) to estimate each household's consumption. While the data are derived from a highly detailed and well-designed survey, this survey has its limitations.[2] In particular, the CES data are not particularly reliable for high-income households, and the high level of dis-saving (spending more than one's income) observed among the poorest households in the survey has been questioned. Exploration of alternative data sources or refinements to the CES data may be warranted.

- Explore factors that result in horizontal inequities. In particular, the study was unable to identify locational factors that may explain differences across groups. Identifying the areas where households reside may provide useful insights into the incidence of particular taxes.

- Refine the estimate of Homestead Credit participation. The study estimates a low participation rate among qualifying households. Further examination of program participation and reasons for non-participation may provide insight into ways to improve the effectiveness of this program.

[2] See Joint Committee on Taxation (1993) and Cronin (1999).

APPENDIX 1: DIFFERENCES BETWEEN THE 1979 AND 2004 STUDIES

The last tax incidence study conducted on Wisconsin taxes was done in 1979 based on 1974 taxes. While the 2004 study endeavors to follow much of the methodology used in the 1979 study, there are several distinct differences between the two. The differences relate to the definition of and data sources used to estimate household income, the taxes analyzed and the shifting assumptions made. These differences preclude real comparisons of the findings from the two studies.

Household Income

Both the 2004 study and the 1979 study define income more broadly than taxable income. Both include taxable and nontaxable sources of income. However, the income definition in the 1979 study was closer to an economic income measure than a money income definition. It included accrued capital gains and the value of fringe benefits. In contrast, the 2004-study income is more of a money income concept. It includes only realized income, such as realized capital gains. The differences in income definition preclude real comparisons of the studies' findings.

Another major difference between the study is that the 1974 had to estimate income from education subsidies for University of Wisconsin residents, social security benefits, unemployment compensation, and government transfers. In contrast, the 2004 study has actual data for these income elements.[1] Data on deferred compensation, social security benefits and unemployment compensation are available from Internal Revenue Service informational returns. Data on Wisconsin recipients of welfare benefits are also available and included in the sample.

Taxes Analyzed

The taxes included in the current study are the individual income tax, corporate income/franchise tax, state and local sales tax, the local property tax and the utility tax. Overall, these taxes represent 92.3% of total 2001 state and local taxes collected. After making certain adjustments, (e.g., excluding part-year residents), the taxes analyzed in the study represent 88% of total state and local taxes collected in 2001.

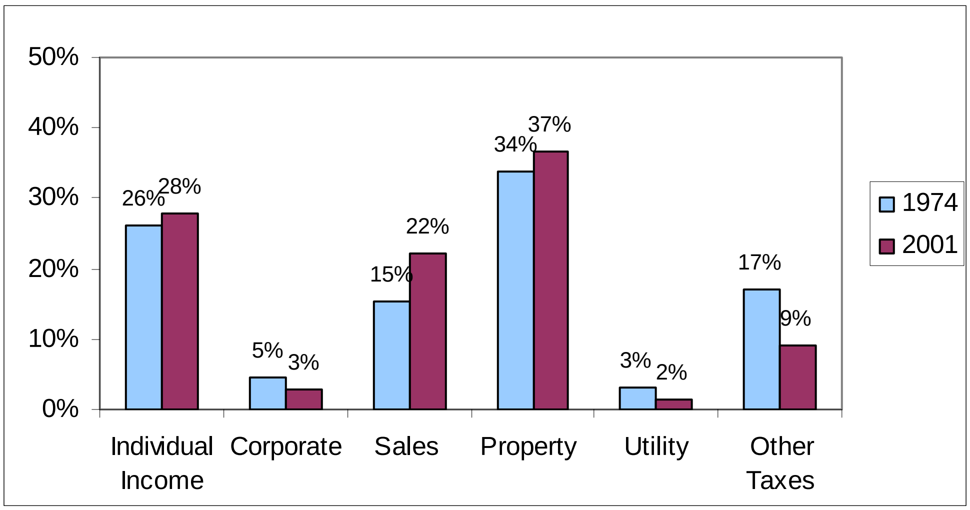
The 1974 study included these taxes as well as motor fuel taxes, motor vehicle taxes (drivers' licenses and motor vehicle registration fee), excise taxes, insurance premiums taxes and inheritance and gift taxes. While these taxes represent only 7.7% of total collections in 2001, they represented 15.2% of total collections in 1974.[2]

Chart A.1.1 compares the composition of total taxes in 2001 and 1974. As the table shows, reliance on the income tax, sales tax and property tax has increased while reliance on the corporate income/franchise tax and utility tax has declined compared to 1974. On its own, increased reliance on the income tax would suggest a more progressive overall tax structure, particularly since this tax represents a significant share of total tax collections, while greater reliance on the sales and property tax would suggest a more regressive tax structure relative to

[1] The current study does not include educational subsidies as an income element.
[2] The discussion ignores the payroll tax, which was included in the 1974 study. This tax, now called the unemployment compensation tax, is not included in the 2004 study.

1974. However, the structure and bases of these taxes have changed since 1974. For example, the individual income tax has been changed insofar as rates have been reduced, brackets widened, a sliding-scale standard introduced, and new filing statuses created (e.g., in 1974, no joint filing was allowed, while in 2001, there were different filing types such as married joint filers and head of household). With regard to the sales tax, a residential heating fuel exemption has been created and local sales taxes introduced since 1974.

CHART A.1.1
TOTAL TAXES BY TAX TYPE, 1974 AND 2001



Shifting Assumptions

The current study follows the approach of the 1979 study insofar as it employs three sets of shifting assumptions. The regressive and progressive sets of assumption are similar in the two studies; however, assumptions used in the third, considered most plausible, variant have important differences. These differences are summarized in Table A.1.1.

One of the most important differences in the assumptions used in the 1979 and 2004 studies relates to the degree to which taxes are shifted forward to consumers. The 1979 study assumed that practically all tax shifting was to consumers in the form of higher prices. This assumption does not appear valid under today's economic conditions due to increased global competition, particularly in the manufacturing sector. It may have been reasonable to assume in 1974 that businesses could pass the burden of some or all of their taxes to consumers without being undersold by domestic competitors since these competitors were likely to be subject to similar taxes in other states. However, current international competition makes it far more difficult for businesses to raise consumer prices today without being undersold by a global competitor. Thus, the current study assumes that businesses that compete primarily in national/international markets have a greater ability to shift taxes backward to workers in the form of lower wages than forward to consumers. Since labor is assumed to bear a larger share of the burden relative to the 1979 study, the degree to which Wisconsin taxes in the manufacturing sector are exported to non-resident consumers is significantly reduced in the current study.

TABLE A.1.1
VARIANT 3 "PLAUSIBLE" ASSUMPTIONS
1979 AND 2004

	Manufacturing		Non--Manufacturing	
	Plausible -1979	Plausible - 2004	Plausible -1979	Plausible - 2004
Sales Tax				
WI Owner	0.2%	1%	25%	5%
WI Consumer	14.0	3	64	57
WI Labor	0.0	70	0	17
Exported	85.8	26	11	21
Corporate Tax				
WI Owner	0.4%	2%	7%	5%
WI Consumer	12.5	1	51	30
WI Labor	0.0	13	0	8
Exported	87.1	85	42	57
Property Tax				
WI Owner	0.2%	7.3%	25%	39%
WI Consumer/Renter	14.0	0.0	64	17
WI Labor	0.0	0.0	0	5
Exported	85.8	92.7	11	40
Rental Housing			100% WI renter	46% WI renter 48% WI owner 6% exported

Based on Wisconsin Department of Revenue's 2001 corporate and partnership data, the 2004 study assumes a higher share of corporate ownership for non-manufacturing sectors than that assumed in 1974. As a result, there is more exporting to non-Wisconsin owners of corporate capital.

The property tax analysis in the 1979 study relied on an estimated allocation of property taxes paid by homeowners and renters. The 2004 study makes use of Wisconsin income tax return information on the school property tax/rent credit not available in 1979 to allocate property taxes paid by homeowners and renters. In addition, the 2004 study assumes some degree of vacancy in rental housing based on Census data.

The "plausible" variant in the 1979 study assumed that property taxes on rental housing were completely shifted to renters. The 2004 study makes a less extreme assumption and assumes that owners bear part of the burden of occupied rental housing and bears the entire burden of unoccupied rental property. A complete shift of the property tax to renters rests on the assumption of almost complete elasticity of supply of capital for housing property and complete inelasticity of demand for housing property. To the extent that these conditions are not likely to hold in the extreme, the current study assumes both property owners and renters share the burden.

This is important to keep in mind as the assumption regarding the shift of property taxes to renters had a dramatic impact on the 1979 conclusions regarding the progressivity of the overall

Wisconsin tax system. Indeed, under the plausible variant for all taxes, the 1979 study concluded that the overall tax structure was regressive, with the poorest families paying over 9% of their economic income in state and local taxes while the wealthiest families paid less than 2%. In contrast, under the progressive variant which assumed that business and capital owners bear the tax burden, the overall tax system was found to be progressive or proportional for economic income up to $60,000.[3] The study notes that this conclusion follows "largely from a single shifting assumption: in the 'progressive' variant, the burden of the residential property tax on rental housing is assumed to be on the landlord."[4]

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[3] Eighty percent of Wisconsin families had incomes between $4,000 and $25,000 in 1974.
[4] Wisconsin Tax Burden Study, Wisconsin Department of Revenue, 1979, page 70.

APPENDIX 2: INCOME ELEMENTS AND DATA SOURCES

Table A.2.1 shows the income tax forms schedules and informational returns for tax year 2001 from which data on the various incomes elements are derived.

TABLE A.2.1
HOUSEHOLD INCOME ELEMENTS (Data Sources) *

	Filers	Non-Filers - Homestead	Non-Filers
Wages, Salaries	1040: Line 7	Schedule H: Line 10a + 10b	W-2: Box 1
Dependent Care Benefits	2441: If line 12 - line 19		W-2 Box 10
Interest	1040: Line 8a + Line 8b (includes OID)	Schedule. H: incl. in Line 10b, add Line 11a #7	1099-INT: Box 1 + Box 3 1099-OID: Box 1+ Box 2
Dividends	1040: Line 9	in Schedule H Line 10a	1099-DIV: Box 1 + Box 2a
Refunds, Credits (state)	1040: Line 10	in Schedule H Line 10b	1099-G Box 2
Alimony Received	1040: Line 11	in Schedule H Line 10b	1040 of payer, Line 31a (Social Security # or payee included)
Business Income	Schedule C: Line 29 - Line 30 Passive Losses Allowed	in Schedule H Line 10b	
Capital Gain	Schedule D: Line 7 - abs(Line 6) Line 16 - abs(Line 14(f)) Line 15 (28% gain) OR 1040: line 13 if box is checked	in Schedule H Line 10b	Already captured under Dividends: 1099 DIV: Box 2a (not able to get stock gains only proceeds from 1099B)
Other Gains	1040: line 14 Excludes carry forward losses Includes all losses (not just $3,000 allowed)		
IRA Distributions	1040: Line 15(b) - taxable Exclude rollovers and basis (prev. nondeductible contribs) + Roth distrib (many rollovers are by pre-retirees unable to receive distrib.)	in Schedule H Line 10b	1099-R Exclude If Box 6 has entry, (trust distribution)

TABLE A.2.1
HOUSEHOLD INCOME ELEMENTS (Data Sources) * (cont.)

	Filers	Non Filers - Homestead	Non-Filers
Pensions	1040: Line 16(b) (taxable) + WI Form 1: Line 4, Addition #1 (lump sum reported on FED 4972) Excludes annual recovery of cost	in Schedule H Line 10b	Included in 1099-R Box 2a (Already captured for IRA distributions) *Disability is included as wages for pre-retirees*
Rental Real Estate	Schedule E: Lines (3 + 4) - Line 21 All passive losses allowed		
Partnership Income	Schedule E: Line 31 - Disallowed Losses Reported on Form 8582		
Estate & Trust	Schedule E: Line 36 - Disallowed Losses Reported on Form 8582		
Farm Income	Schedule F: Sum of Lines 3, 4, 5a, 6a, 8a, 9, 10) - Line 35 WI Form 1: Line 4, Addition 6 (FPC/FTR Payment made in 01) Exclude Loan Proceeds (7a and 7b) in income Allows Passive Losses	in Schedule H Line 10b	1099-G Box 7 (only support payments)
Farm Rental Income	Schedule E: Line 39 less Disallowed Losses Reported on Form 8582		
Unemployment Comp	1040: Line 19	Schedule H: Line 11b	1099-G Box 1
Social Security Benefits	SSA-1099 Box 5	SSA-1099 Box 5	SSA-1099 Box 5
Other Income	1040: Line 21 (if positive) Exclude loss carryforwards	1099-G: Box 5 + Box 6	1099-G: Box 5 + Box 6
Grants	(Taxable grants in wages; grant earnings in Line 21)	(grants earnings + taxable grants)	

TABLE A.2.1
HOUSEHOLD INCOME ELEMENTS (Data Sources)*(cont.)

	Filers	Non Filers - Homestead	Non-Filers
Deferred Comp	W-2: Box 5 (Medicare Wages) - Box 1 (Wages)	W-2: Box 5 (Medicare Wages) - Box 1 (Wages)	W-2: Box 5 (Medicare Wages) - Box 1 (Wages)
Welfare	DWD data	Schedule H: Line 11h	DWD data
Child Care Subsidies	DWD data	DWD data	DWD data
Deductions:			
Moving Expense	1040: Line 26		
Casualty Loss on Business Property	Captured in 1040: line 14 (losses) or Schedule D (gains)		
Casualty Loss on Personal Use Property	1040, Schedule A: Line 19 + [(1040, Line 33) X .10]		
Unreimbursed Employee Expenses	1040, Schedule A: Line 20		
Other Expenses	1040, Schedule A: Line 22 (includes casualty loss of employee prop.)		
Self-employed Tax	1040: Line 27 (proxy for employer share of social security tax)		
Self-employed SEP, SIMPLE	1040: Line 29 (proxy for employer share of retirement plan)		
Self-employed health insurance	1040: Line 28 (proxy for employer share of health insurance)		
Alimony paid	1040: Line 31a		

* Tax Forms and Schedules refer to those for tax year 2001.
Welfare Benefits:
OID = Other interest and dividends.
DHFS = Department of Health and Family Services.
DWD = Department of Workforce Development.
SSA = Social Security Administration.
SEP = Simplified Employee Pension
SIMPLE = Saving Incentive Match Plan for Employees

APPENDIX 3: DATA BENCHMARKS

This appendix provides a comparison of study estimates of various data elements with data from other available sources. Regarding household characteristics, comparisons are made with U.S. Census data. Regarding income elements, comparisons are made with data from the Statistics of Income (SOI) from the Internal Revenue Service and data from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). Regarding business taxes, comparisons are made with data estimated for the Council on State Taxation (COST).

Household Characteristics

As discussed in Chapter IV, the study includes 2.43 million households. To compare the estimated number of households with Census estimates, definitional differences must be taken into account. The study defines households consistent with tax filing status. Thus, a household is composed of people who typically are living together and related by blood, marriage or adoption. Individuals claimed as dependents are considered part of the household whether or not they live at the same address. However, adult children living with parents are considered a separate household. Similarly, two unrelated adults living together are considered two households. Under the Census definition of household, people residing together are considered a household, whether or not they are related. As a result, the Census estimates will be lower than the study estimate.

Table A.3.1 shows the reconciliation of the two household estimates. Using Census data on children (total and under 18) living in households and data on non-spouse relatives and subfamilies living in households, it is possible to estimate the number of non-spouse adults (both related and unrelated) that are included in households for Census purposes but are treated as separate units in the study.

Counting these non-spouse adults as separate Census households, the study's estimate of Wisconsin households is 328,000 lower than the Census estimate. After accounting for the filers that are excluded from the analysis, the study estimates 127,600 fewer households than the Census estimate.[1]

Table A.3.2 compares household characteristics for study members and Census data after adjustments are made to Census data to conform to the study's definition of household. Approximately 77% of the (weighted) sample has a head of household 64 years or younger, which is comparable to Census data. Of those households with a head of household younger than 65, 47% are married, compared to 44% reported in the Census. The study indicates that 34% of households with a head of household older than 64 are married compared to 35% in the Census.[2]

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[1] It is assumed that one-third of the dependent filers filing separately lived in separate, non-institutional dwellings.
[2] Non-filer social security recipients are assumed to be single unless federal data reporting marital status are available.

TABLE A.3.1
2001 WISCONSIN HOUSEHOLDS
U.S. CENSUS VS. TAX INCIDENCE STUDY

Census Data - WI 2000	
Total Households (Census Definition)	2,084,544
Adult Children in household	304,010
Siblings/Parents/Other Relatives in household	61,003
Boarders/Roommates/Partners/Non-relatives	253,001
2000 Total WI Households, Census	2,702,558
2001 Total WI Households,* Census	2,755,258
Tax Incidence Study Households, 2001	
Tax Filers	
Excluding:	
Dependents, married separate filers, part-year, and non-resident filers and negative income filers	2,230,335
Welfare Non-filers	8,629
Social Security Recipient Non-filers	174,500
Total Tax Incidence Study Households	2,413,464
Difference	341,794
Excluded from study:	
Proraters (Part-Year and Non-Resident Filers)	94,144
Married, Separate Filers	15,495
Est. Single Dependents living in separate quarters**	94,975
Filers with Negative Total Income	9,610
Total Excluded from Study	214,224
Final Difference in Households (Census - Study)	127,570

*Assumes 1.95% growth in total households, based on the U.S. growth in households and the ratio of Wisconsin population growth to U.S. population growth.
**Assumes 1/3 of single dependents live in separate, non-institutional living quarters.
Source: 2000 U.S. Census, Wisconsin Department of Revenue 2001 Income Tax Model

Due to the definitional differences between the Census and the study, it is difficult to readily compare household income. However, it is possible to compare the income of family households and householders living alone.[3] The median 1999 family household income in Wisconsin was $52,900 according to Census data; using BEA data on growth in personal income, this translates to $58,000 in 2001. The study estimates the median income for a household with two or more people at $53,750. However, the Census defines family households as related people living together, whereas the study distinguishes between related people who are dependent and independent.

Thus, the Census would consider a household consisting of a married couple and an elderly parent as a single-family household, whereas the study would define this as two separate

[3] For purposes of this comparison, household income is defined in a way to be consistent with the Census definition.

households. Thus, it is to be expected that the Census family income would be higher than the study's estimate.

For people living alone, the Census reports income by gender. People under 65 living alone are reported to have a median 2001 Census income between $27,600 (females) and $33,330 (males); the study estimates the median income for people under 65 living alone to be $24,400. For people over 65 living alone the median 2001 Census income is reported to be between $16,500 (females) and $20,700 (males), compared to the study's estimate of $15,325. Thus, the study appears to understate median one-person household income relative to Census data.

TABLE A.3.2
HOUSEHOLD CHARACTERISTICS: CENSUS AND TAX INCIDENCE STUDY

	Census[1]		Tax Incidence Study	
Count of Households	Count or Amount	%	Count or Amount	%
Under 65	2,109,624	78%	1,858,213	77%
Over 64	582,186	22%	568,754	23%
Total	2,691,`810		2,426,967	
% Married[2]				
Under 65		44%		47%
Over 64		35%		34%
Total		42%		44%
Median Family Income 2001[3]	$58,000		$53,750	
Median Income for Householder Living Alone				
Male:			n.a	
15-64	$33,330		n.a	
Over 64	$20,664		n.a	
Total	$30,193			
Female:			n.a	
15-64	$27,614		n.a	
Over 64	$16,548		n.a	
Total	$21,264			
All:				
15-64	n.a.		$24,400	
Over 64	n.a.		$15,325	
Total	n.a.		$20,725	
% Homeowners[4]				
15-64		51%		54%
Over 64		59%		59%
Total		53%		55%

[1]To ensure consistency in definition of household across the Census and the study, adult relatives and non-relatives added to Census-defined households in Table A.3.1 are allocated to Under 65 and Over 65 households based on the share of these households to total Census-defined households.
[2]Non-filers for whom no information was available were assumed to be single.
[3]Based on Census-defined household (age) and family (family income). Census figures are 1999 inflated to 2001 based on BEA growth in personal income.
[4]A random allocation of homeownership was assigned to 50,900 over-65 non-filer households to ensure homeownership rates similar to Census.
Property tax liability for these households were based on income and liability of similar households in the sample.

The Census reports 51% of Wisconsin households headed by individuals younger than 65 own their home and 59% of those 65-and-over-headed households own their home. Data are available to identify homeownership for the sample's tax-filing households and welfare recipients. However, homeownership data are not available for non-filers. To ensure consistency with Census data, the study assigns homeownership and property tax liability to roughly 30% of the non-filing social security recipients. Non-filer welfare recipients are assumed to be renters.

Table A.3.3 compares the study's estimate of family income by family size to Census estimates.[4] As can be expected, the study estimates far more one-person family households than the Census. The study estimates about 572,000 more one-person households. The Census considers a household consisting of husband, wife, two dependent children and one adult child who is not a dependent as a 5-person household. The tax incidence study would consider this to be two households – a 4-person household and a 1-person household. Census data indicates that there were 365,000 adult children or relatives living in a family household in 2000. Additionally, unrelated adults who reside in a family household are not included in this Census data as part of a family or as a person living alone. Thus, an unmarried individual living with a partner and the partner's child would not be counted in the two-person household of the partner and child, nor would he or she be considered a one-person household. For purposes of the study, however, this person would be considered a single-person household.

Census data indicates approximately 153,000 more multi-person households than the study. This too is to be expected given the different definition of households. Separating adult relatives into a separate household will reduce the household size by at least one household member.

Sources of Income

Table A.3.4 compares total income estimates (nontaxable as well as taxable) for the study population as well as for the tax filers dropped from the analysis.[5] The main benchmark data source used is from the Statistics of Income (SOI) program of the Internal Revenue Service. Total income for tax purposes may be different than the income used in the study to the extent that certain types of income, such as business income and capital gains, are subject to exemptions and limits on losses for tax purposes, whereas no such limits are imposed on the income concept used in the study. Also, some sources of income included in the study are not completely taxable, such as social security and pension income. Where data from outside sources are limited, only taxable income is reported.

The study's estimates of most income elements are consistent with benchmark sources. The estimate of farm and business income appears to be lower than SOI data. This is likely the result of a different allocation of part-year residents to the state by SOI. Also, partnership and rental income appears to be lower in the study than what the state's share of federally adjusted gross income would indicate. The SOI estimates of these elements are U.S. totals apportioned to the state by Wisconsin's share of adjusted gross income.

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[4] The Census data are for 1999; the 2001 distribution is imputed based on a 1.95% annual growth for all household sizes. For purposes of this comparison, family income is defined in a way to be consistent with the Census definition.

[5] A study-to-benchmark ratio greater than 100% is largely due to income of non-residents who must file Wisconsin income taxes.

TABLE A.3.3
COUNT OF HOUSEHOLDS, 2001
FAMILY INCOME BY HOUSEHOLD SIZE
CENSUS VS. TAX INCIDENCE STUDY[1]

	One-Person Households		Two-Person Households		Three-Person Households		Four-Person Households	
Income Class[2]	Census[3]	Study	Census	Study	Census	Study	Census	Study
<$10,629	122,122	238,333	25,339	29,941	12,121	11,988	7,330	6,007
$10,630-$15,944	83,612	182,648	25,774	27,164	8,759	11,115	5,172	8,325
$15,945-$21,259	51,164	163,651	37,349	40,044	10,871	13,805	6,132	6,018
$21,260-$26,575	53,158	130,290	45,414	40,032	12,969	16,251	7,914	11,415
$26,576-$31,890	43,393	109,665	49,170	45,743	14,573	14,778	9,774	8,523
$31,891-$37,205	37,900	90,940	49,972	50,916	16,207	10,488	11,627	11,714
$37,206-$42,520	31,655	57,349	46,899	52,375	17,570	12,526	13,630	12,458
$42,521-$47,835	24,026	43,737	45,419	48,253	18,802	13,501	16,711	12,813
$47,836-$53,150	18,614	33,575	41,585	43,593	18,742	16,426	17,883	13,040
$53,151-$63,780	29,559	36,487	76,663	73,872	39,046	30,228	39,998	34,248
$63,781-$79,726	25,572	23,443	85,188	83,507	50,332	34,625	53,439	46,316
$79,727-$106,301	19,733	10,047	73,425	72,210	48,564	33,823	52,360	41,189
$106,302-$132,877	17,292	9,922	30,912	25,468	20,110	12,671	22,068	17,254
$131,878-$159,453			13,423	11,676	8,108	5,475	9,026	8,150
$159,454-$212,604			11,013	9,894	5,660	3,581	6,944	7,403
>$212,605			12,135	10,822	5,544	4,225	6,045	6,328
Total	557,799	1,130,087	669,678	665,510	307,980	245,506	286,053	251,201

TABLE A.3.3 (cont.)
COUNT OF HOUSEHOLDS, 2001
FAMILY INCOME BY HOUSEHOLD SIZE
CENSUS VS. TAX INCIDENCE STUDY[1]

	Five-Person Households		Six-Person Households		Seven-Person Households		Total	
Income Class[2]	Census	Study	Census	Study	Census	Study	Census	Study
<$10,629	3,597	2,163	1,754	1,081	1,195	696	173,459	290,209
$10,630-$15,944	2,182	1,236	1,001	820	824	124	127,323	231,432
$15,945-$21,259	3,133	2,377	1,299	807	881	975	110,830	227,677
$21,260-$26,575	3,829	3,030	1,736	610	1,073	578	126,092	202,206
$26,576-$31,890	4,797	3,356	1,620	1,576	1,161	594	124,488	184,235
$31,891-$37,205	5,534	5,614	1,970	576	1,153	906	124,362	171,154
$37,206-$42,520	6,675	5,043	2,171	2,274	1,067	798	119,667	142,823
$42,521-$47,835	7,570	4,915	2,530	1,487	1,397	905	116,455	125,611
$47,836-$53,150	8,196	6,488	2,568	1,829	1,270	1,441	108,857	116,392
$53,151-$63,780	16,490	12,409	5,492	3,399	2,335	1,218	209,584	191,861
$63,781-$79,726	22,033	18,852	6,389	3,281	2,481	1,336	245,433	211,360
$79,727-$106,301	21,543	17,341	6,079	1,967	2,385	1,336	224,090	177,913
$106,302-$132,877	9,729	6,516	2,967	1,478	1,082	368	104,160	67,650
$131,878-$159,453	3,921	2,977	1,228	722	498	73	36,203	30,988
$159,454-$212,604	3,305	3,131	883	775	320	138	28,127	26,499
>$212,605	3,323	3,527	1,196	1,147	400	374	28,643	28,958
Total	125,854	98,975	40,885	23,829	19,524	11,860	2,007,773	2,426,968

[1]Income is defined similar to the income definition used in the study except capital gains and tax refunds are excluded. The Census household income includes Supplemental Security Income, veterans' benefits and child support. The study data do not include these income sources.

[2]The Consumer Price Index was used to convert 1999 income classes to 2001 values.

[3] One-person household data is from 1999 Census data and 2001 Annual Demographic Survey data; all other households are based on 1999 Census data used to estimate 2001 households.

TABLE A.3.4
INCOME ELEMENTS TAX INCIDENCE STUDY COMPARED TO BENCHMARK ESTIMATES

2001 Income Element	Tax Incidence Study Estimate ($) (1)	Benchmark Estimates ($) (2)	Share[1] (1)/(2)	Benchmark Data Source
Federal Adjusted Gross Income (filers only)				
Tax Incidence Study	$106,989,435,736			
Excluded Filers[2]	$15,121,157,780			
	$122,110,593,516	$122,105,645,000	103%	WI DOR
		$114,224,632,000		SOI
Wisconsin Adjusted Gross Income (filers only)				
Tax Incidence Study	101,744,997,330			
Excluded Filers[2]	4,403,297,291			
	106,148,294,621	106,145,507,899	100%	WI DOR
Family Money Income				
Tax Incidence Study	114,976,521,172			
Excluded Non-Filers	533,182,103			
SSI Payments	495,389,622			
Excluded Filers[2]	3,981,045,945			Census
	119,986,138,841	121,748,992,060	99%	(includes SSI)
Wages and Salaries				
Tax Incidence Study	79,912,751,309			
Excluded Filers[2]	8,582,759,626			
Total Wages and Salaries	88,495,510,935	85,431,928,000		SOI,
		89,655,764,000	102%	BEA
		85,035,632,400		Census
Interest (taxable + nontaxable)[3]				
Tax Incidence Study	3,919,683,103			
Excluded Filers[2]	254,808,019			
Total Interest	4,174,491,122	4,251,944,000	98%	SOI
Deferred Compensation				
Tax Incidence Study	3,380,490,506			
Excluded Filers[2]	88,704,720			
Total Deferred Compensation	3,469,195,226			
Pension/IRA (taxable + nontaxable)				
Tax Incidence Study (Filers)	8,737,983,265			
- Taxable[3]	8,258,793,297	8,605,496,000	96%	SOI
- Nontaxable	479,189,968			
Non-filers	263,623,117			
Excluded Filers[2]	227,408,577			
Total Pension Income	9,229,014,959	8,605,496,000	107%	SOI

TABLE A.3.4 (cont.)
INCOME ELEMENTS – TAX INCIDENCE STUDY COMPARED TO BENCHMARK ESTIMATES

2001 Income Element	Tax Incidence Study Estimate ($) (1)	Benchmark Estimates ($) (2)	Share[1] (1)/(2)	Benchmark Data Source
Dividend Income				
Tax Incidence Study	1,687,022,482			
Excluded Filers[2]	121,004,580			
Total Dividend	1,808,027,062	1,918,215,000	94%	SOI
Net Farm Income				
Tax Incidence Study	-13,683,440			
Excluded Filers[2]	-223,548,474			
Total Net Farm Income	-237,231,914	-187,385,000	127%	SOI
Capital Gains				
Tax Incidence Study	3,587,853,953			
Excluded Filers[2]	323,896,389			
Total Capital Gains	3,911,750,342	4,522,108,000	87%	SOI
Taxable Capital Gain[3]				
Tax Incidence Study	4,084,537,150			
Excluded Filers[2]	1,022,083,328			
Total Taxable Capital Gain	5,106,620,478	4,522,108,000	113%	SOI
Welfare Assistance				
Tax Incidence Study	273,419,640			
Excluded Filers[2]	5,713,836			
Excluded Non-Filers	1,256			
Total Welfare Benefits	279,134,732	279,134,732	100%	WI DWD
Total Business Income				
Tax Incidence Study	2,757,130,976			
Excluded Filers[2]	328,461,902			
Total Business Income	3,085,592,878	3,084,454,000	100%	SOI
Taxable Business Income[3]				
Tax Incidence Study	2,745,045,712			
Excluded Filers[2]	341,176,550			
Total Business Income	3,086,222,262	3,084,454,000	100%	SOI
Partnership & S-Corp Income[4]				
Tax Incidence Study	3,614,330,522			
Excluded Filers[2]	-229,470,246			
Total Partnership/S-Corp. Income	3,384,860,276	3,895,069,212	87%	SOI[4]
Social Security Income (Taxable + Nontaxable)[3]				
Tax Incidence Study	8,286,166,240			
Excluded Filers[2]	278,831,832			
Excluded Non-Filers	496,377,390			
Total Social Security Income	9,061,375,462	8,819,982,000	100%	BEA
		9,348,948,000		SSA

TABLE A.3.4 (cont.)
INCOME ELEMENTS – TAX INCIDENCE STUDY COMPARED TO BENCHMARK ESTIMATES

2001 Income Element	Tax Incidence Study Estimate ($) (1)	Benchmark Estimates ($) (2)	Share[1] (1)/(2)	Benchmark Data Source
Unemployment Compensation				
Tax Incidence Study	699,995,390			
Excluded Filers[2]	41,403,986			
Total Unemployment Compensation	741,399,376	766,149,000	95%	SOI
		797,750,000		BEA
Non Farm Rental Income	408,179,324	513,419,107	80%	SOI[4]
Farm Rental Income[2]	50,963,132	55,391,849	92%	SOI[4]
Excluded Filer Nonfarm + Farm Rental Income	117,496,181			
Total Rental Income	576,638,637	568,810,956	101%	

[1]When data from two or more outside sources exist, the share is based on the average of the outside estimates.
[2]Tax filers that are assumed not to reside in Wisconsin at any point in the year are not included.
[3]Taxable for federal purposes.
[4]Estimated U.S. total allocated to Wisconsin based on share of federal adjusted gross income.

Data Sources:
BEA: Bureau of Economic Analysis, U.S. Department of Commerce.
SSA: Social Security Administration.
SOI: Statistics of Income, U.S. Internal Revenue Service.
U.S. Census: 1999 imputed to 2001 levels using BEA annual growth in personal income.
WI DWD: Wisconsin Department of Workforce Development.
WI DOR: Wisconsin Department of Revenue.

Tax-Deferred Retirement Accounts

Wages that are reported for income tax purposes are different from those reported for social security and Medicare tax purposes. Wages for income tax purposes are after employee deductions for tax deferred retirement plans allowed under ss. 409(k), 403(b) and 457 of the Internal Revenue Code. Thus, wages reported on the income tax return may understate the true wages of an individual. Employee contributions to tax deferred retirement plans have to be added back to the wages reported on the tax return in order to get to the income concept used in the study.

The study estimates the amount of employee contributions to 401(k), 403(b) and 457 tax-deferred retirement plans by subtracting the Medicare wages and tips reported on 2001 W-2 Wage and Tax Statements from wages and tips used for income tax purposes also reported on the statement. The study allows only the maximum $10,500 contribution per individual. Actual data on employee contributions to tax-deferred retirement accounts are not available.[6] The most recent data available on employee contributions are for 1997 compiled by the Congressional Budget Office (CBO) for all U.S. workers.

Table A.3.5 shows the distribution of Wisconsin earners in the study contributing to deferred compensation plans by filing status and income group. The table includes the participation rate and average contribution reported in the 1997 CBO study. The changes since 1997 are consistent with observed trends – both in terms of participation and amount of contributions. The average contribution for all earners was $3,090 in 2001, compared to $2,770 in 1997. Participation increased for both single and married earners. Approximately 33% of single earners contributed to a plan, up from 19% in 1997; their average contribution also increased from $2,200 to $2,500. Forty percent of married couples with only one earner contributed an average of $4,100 in 2001. Of the married couples with two earners, 61% of the primary earners contributed and 40% of the secondary earners contributed to plans.

Overall, the study finds that 42.5% of households with wage earners contributed $3.38 billion in 2001 to tax deferred accounts.[7]

Business Taxes

Businesses are assumed to pay approximately 27% of all state and local taxes under analysis. Property taxes on businesses comprise 54% of all business taxes; sales tax paid on business inputs and capital expenditures comprise 30%, and corporate taxes and utility taxes make up 12% and 3% respectively.[8]

A recent study by the Council on State Taxation (COST) estimates that businesses in Wisconsin pay 35% of total state and local taxes. However, the COST study includes taxes not considered in the study, such as unemployment and workers' compensation, licenses and non-utility excise taxes. The COST study does not show the breakdown by type of business taxes for Wisconsin, but other COST studies provide that breakdown for all states.

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[6] Data exist on total employee compensation deferrals including employer contributions as well employee contributions.

[7] When the excluded filers are added, total 2001 contributions were $3.55 billion.

[8] The sales and utility taxes initially paid by businesses are estimated using Census data on type of customer. Corporate income and property taxes are actual tax collections.

TABLE A.3.5
ESTIMATED WISCONSIN
PARTICIPATION AND CONTRIBUTIONS TO 401(k) TYPE PLANS, 2001[1]

Income Group of Filing Unit (1)	Total Number of Earners (2)	Individuals Participating (3)	Participation Rate (4)=(3)/(2)	Total Contributions (5)	Ave. Contribution (6)=(5)/(3)
	SINGLE EARNERS				
Under $20,000	432,561	40,794	9.4%	$43,406,252	$1,064
$20,000 to < $40,000	392,195	180,012	45.9%	$323,040,358	$1,795
$40,000 to < $60,000	126,686	77,568	61.2%	$288,629,500	$3,721
$60,000 to < $80,000	29,422	16,491	56.0%	$79,647,585	$4,830
$80,000 to < $100,000	6,656	3,730	56.0%	$25,208,884	$6,758
$100,000 to < $120,000	3,391	2,265	66.8%	$13,715,204	$6,055
$120,000 to < $140,000	1,642	1,044	63.6%	$7,027,932	$6,732
$140,000 to < $160,000	903	668	74.0%	$4,326,732	$6,477
$160,000 or greater	3,280	2,144	65.4%	$15,847,471	$7,392
TOTAL 2001 -WI	996,736	324,716	**32.6%**	$800,849,918	**$2,466**
TOTAL 1997- U.S. [2]			19.3%		$2,190
	MARRIED/SOLE EARNERS				
Under $20,000	47,190	5,678	12.0%	$6,617,849	$1,166
$20,000 to < $40,000	72,685	23,797	32.7%	$45,849,174	$1,927
$40,000 to < $60,000	59,518	26,981	45.3%	$78,672,936	$2,916
$60,000 to < $80,000	38,942	21,523	55.3%	$102,222,704	$4,749
$80,000 to < $100,000	18,530	10,148	54.8%	$50,624,329	$4,989
$100,000 to < $120,000	8,509	5,226	61.4%	$33,080,075	$6,330
$120,000 to < $140,000	6,744	4,160	61.7%	$29,980,353	$7,207
$140,000 to < $160,000	4,126	2,473	59.9%	$17,791,090	$7,194
$160,000 or greater	17,307	10,730	62.0%	$88,050,947	$8,206
TOTAL 2001 -WI	273,551	110,716	**40.5%**	$452,889,457	**$4,091**
TOTAL 1997- U.S. [2]			27.2%		$3,580
	MARRIED/PRIMARY EARNERS				
Under $20,000	14,530	2,328	16.0%	$3,071,501	$1,319
$20,000 to < $40,000	75,751	28,778	38.0%	$45,996,197	$1,598
$40,000 to < $60,000	173,781	96,226	55.4%	$231,275,074	$2,403
$60,000 to < $80,000	184,558	123,247	66.8%	$405,365,919	$3,289
$80,000 to < $100,000	103,239	75,901	73.5%	$343,891,251	$4,531
$100,000 to < $120,000	44,074	33,245	75.4%	$185,054,212	$5,566
$120,000 to < $140,000	20,770	14,799	71.3%	$99,734,591	$6,739
$140,000 to < $160,000	11,425	8,609	75.4%	$62,137,048	$7,218
$160,000 or greater	25,501	17,810	69.8%	$141,285,583	$7,933
TOTAL 2001 -WI	653,629	400,943	**61.3%**	$1,517,811,376	**$3,786**
TOTAL 1997- U.S. [2]			43.8%		$3,398
	MARRIED/SECONDARY EARNERS				
Under $20,000	14,530	492	3.4%	$922,181	$1,874
$20,000 to < $40,000	75,751	8,782	11.6%	$7,396,646	$842
$40,000 to < $60,000	173,781	55,428	31.9%	$64,654,805	$1,166
$60,000 to < $80,000	184,558	81,639	44.2%	$153,905,505	$1,885
$80,000 to < $100,000	103,239	56,587	54.8%	$148,872,976	$2,631
$100,000 to < $120,000	44,074	25,024	56.8%	$88,457,046	$3,535
$120,000 to < $140,000	20,770	10,979	52.9%	$44,256,144	$4,031
$140,000 to < $160,000	11,425	6,504	56.9%	$32,046,570	$4,927
$160,000 or greater	25,501	12,674	49.7%	$69,888,156	$5,514
TOTAL 2001 -WI	653,629	258,109	**39.5%**	$610,400,029	**$2,365**
TOTAL 1997- U.S. [2]			28.5%		$2,239
		TOTAL			
Under $20,000	508,811	49,292	9.7%	$54,017,783	$1,096
$20,000 to < $40,000	616,382	241,369	39.2%	$422,282,375	$1,750
$40,000 to < $60,000	533,766	256,203	48.0%	$663,232,315	$2,589
$60,000 to < $80,000	437,480	242,900	55.5%	$741,141,713	$3,051
$80,000 to < $100,000	231,664	146,366	63.2%	$568,597,440	$3,885
$100,000 to < $120,000	100,048	65,760	65.7%	$320,306,537	$4,871
$120,000 to < $140,000	49,926	30,982	62.1%	$180,999,020	$5,842
$140,000 to < $160,000	27,879	18,254	65.5%	$116,301,440	$6,371
$160,000 or greater	71,589	43,358	60.6%	$315,072,157	$7,267
TOTAL 2001 -WI	**2,577,545**	**1,094,484**	**42.5%**	**3,381,950,780**	**$3,090**
TOTAL 1997- U.S. [2]			26.7%		$2,772

[1] Includes 401(k), 403(b) and 457 plans.

[2] "Utilization of Tax Incentives for Retirement Savings", Congressional Budget Office Paper, August 2003.

Data Sources: Tax Burden Sample, 2001 W-2 Informational Return.

Using the national data, it is possible to estimate the share that taxes excluded from the Tax Incidence Study represent to total business taxes in Wisconsin. Excluding these taxes, the COST estimates indicate that businesses pay 28% of all Wisconsin taxes. Assuming the same breakdown for Wisconsin business taxes as the national shares, the COST data indicates a very similar business breakdown as the tax incidence study.

The main difference between the two studies is the share of utility taxes to total business taxes. Presumably, this difference is due to different assumptions used. The tax incidence study bases its allocation of utility taxes to business on Census data, which indicates that business pay 29% of all utility taxes, whereas residential consumers pay 71% of the tax. In contrast, the COST study assumes utility taxes are borne solely by business.[9]

Table A.3.6 compares the business taxes under both studies.

TABLE A.3.6
WISCONSIN BUSINESS TAXES TO TOTAL TAXES, 2001

	Total Taxes		Business Tax Breakdown	
Business Taxes	Study	COST*	Study	COST (National)*
Corporate Income & Franchise Tax	471,841,323		12%	11%
Sales Tax on Business Inputs	1,242,246,872		30%	28%
Property Tax on Business Property	2,226,600,000		55%	54%
Utility Tax	136,706,000		3%	7%
Total Business Tax	4,077,394,195		100%	100%
		4,800,697,500		
Taxes on Individuals				
Individual Income Taxes	4,474,394,333			
Sales Tax on Consumer Purchase	2,499,412,948			
Residential Property Tax	4,133,120,152			
Utility Tax on Consumer Use	97,988,000			
Total Taxes	15,184,321,628			
		17,287,197,500		
Business Tax Share of Total Taxes	26.9%	27.8%		

*Council on State Taxation (COST): *Total State and Local Business Taxes: A 50-State Study of the Taxes Paid by Business in 2003*, January 2004.
A Closer Examination of the Total State and Local Business Tax Burden, January 2003. Average of FY00 and FY03.
Total taxes adjusted to exclude taxes not part of the tax incidence study.
Excluded taxes are based on the share of these taxes to total business taxes for all states.

A study by Ring estimates the proportion of sales tax paid by businesses in each state with a general sales tax using Consumer Expenditure Survey data for 1989 (Ring, 1999). Ring estimates that 62% of Wisconsin sales taxes were paid by consumers in 1989. This compares to this study's estimate of 67% in 2001 as reported in Table III.4. Several factors can help explain the differences between the estimates. First, the percentage reported in Table III.4 refers only to the percentage of sales taxes paid for non-governmental purchases. Ring calculates the consumer share of all sales taxes, including taxes collected on governmental purchases.

[9] COST does not include the sales taxes paid on consumer utility purchases.

Second and more importantly, it can be argued that the share of business taxable purchases have declined relative to consumer purchases due to both legislated exemptions and the dramatic increase in remote sales, particularly e-commerce. Bruce and Fox estimate a loss of $252.2 million in 2001 Wisconsin sales tax revenue due to exemptions, remote sales, changing consumption patterns, and e-commerce (Bruce and Fox, 2001). Of this amount, $113.1 million is due to new e-commerce losses; these are on sales made through the Internet that would have otherwise been taxable. The study notes that 93% of all 2001 e-commerce activity were business-to-business transactions, and that business-to-business transactions were responsible for approximately 75% of new e-commerce losses. To the extent that business-to-business taxable purchases are declining relative to business-to-consumer transactions, it can be expected that the consumer share of total sales taxes in 2001 is larger than in 1989.

APPENDIX 4: DERIVATION OF PLAUSIBLE VARIANT ASSUMPTIONS

The assumptions used in the plausible variant regarding tax shifting of business taxes follows that used by the State of Minnesota for its tax burden studies conducted biennially since 1991.[1]

The methodology used to construct the plausible variant for each tax has unique features and assumptions; however, the methodology used for each tax follows the same basic premise. Underlying the analysis is the assumption that capital is mobile and that it seeks the highest possible after-tax return. If a tax imposed on business capital in a single state or a single industry reduces the after-tax return, owners of capital will seek lower-tax locations or industries. As capital leaves the higher-tax location (or industry), business production in that state (or industry) will fall; as a result, either prices will increase (due to reduced supply) and/or payments to the factors of production (land and labor) will decrease (due to reduced factor demand) until the after-tax return is equal to the return to capital elsewhere.

An increase in the price of the goods produced implies a shift to consumers; thus, the consumer bears part of the tax to the extent that higher prices for goods results in a decrease in the consumer's income. Similarly, a decrease in the wage paid to labor implies a shift to labor, which means that part of the tax is borne by labor as labor's income is reduced. In such a situation, even though the tax is initially imposed on the business capital, part of the tax is shifted to consumers, workers, or owners of land.

What is of key importance is that after capital has fully adjusted to different tax rates in different sectors, the after-tax rate of return on capital should be approximately the same for all states and all industries. As capital leaves high-tax locations for lower-tax locations, the return on capital increases in the high-tax area (as prices and/or wages adjust) and the return on capital decreases in the low-tax area due to greater competition and supply in these areas.

Business taxes include taxes on capital (structures, equipment, land) and taxes on non-capital inputs to production, e.g., sales taxes on non-capital purchases. Most taxes imposed on business can be viewed as a tax on capital (business property taxes, corporate income/franchise tax, sales taxes on capital equipment); however, only the share of the tax that represents the average tax imposed on all capital in all states is borne by the owners of capital.[2] This is because, capital cannot escape a tax that is imposed by all states on all forms of capital by moving to another state or by shifting investment to another sector.

If a sector in a given state is taxed at a rate that is higher than the national average for all forms of capital, mobility of capital will ensure that the after-tax return in that sector is equivalent to returns of capital in other sectors. This implies that the amount in excess of the national average rate is shifted either to consumers (higher prices) or workers (lower wages) or owners of land (lower rents).

For products sold locally (e.g. services, food sold in restaurants), a state tax rate that is higher than the national average rate will result in either: (1) fewer producers in the state, as investors

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[1] The Minnesota approach assumes a high degree of forward shifting to consumers relative to the Wisconsin study, an assumption that is highly unlikely give the increased globalization of the economy. Thus, the Wisconsin study assumes the shifting that occurs will typically be to workers in the form of lower wages for those sectors competing in national and international markets. For sectors that compete in more local markets, the shifting is to both consumers and workers.

[2] Because states do not impose the same tax rate on all forms of capital, the national average tax rate for each form of capital can be derived using aggregate data on national capital stock.

seek a lower-tax sector; and/or (2) an increase in consumer prices to ensure the after-tax return for the capital in that sector equals the return in other sectors. For products sold in national or global markets, the producer is less able to shift the tax to consumers, as he or she would be undersold by a competitor. To ensure the maximum after-tax return, the producer will shift the tax to the factors of production in the form of lower rents paid to landowners or lower wages paid to workers. To the extent that land is immobile and that workers are unable or unwilling to move to lower-tax areas, the burden of the state differential will be borne by workers and/or landowners for industries competing in national/global markets.

In summary, business taxes are assumed to be borne by owners of capital, consumers, workers, or landowners depending on the Wisconsin tax rate for the sector and the national average tax rate on all capital.

Corporate Income and Franchise Tax

The national average corporate rate in 2001 is estimated by dividing total state and local corporate tax collections by corporate profits.

Table A.4.1 shows the calculation of the national average corporate rate using Census Bureau data on state and local corporate tax collections ["Quarterly Summary on State and Local Government Tax Revenue," and U.S. Bureau of Economic Analysis (BEA) National Income and Product Account (NIPA) data on corporate profits.] The 2001 national average rate is estimated to be 5.87%.[3]

TABLE A.4.1
DERIVATION OF NATIONAL AVERAGE CORPORATE RATE

2001 Total State & Local Corporate Tax Collections ($ millions) (U.S. Census)	$31,400
2001 Total Corporate Net Profits ($ millions) (BEA NIPA Table 6.17D)	$535,293
National Average Corporate Rate	5.87%

The Wisconsin effective corporate tax rates for the manufacturing, commercial (retail and services), wholesale/finance, and other sectors are derived by dividing corporate tax revenues from those sectors by a measure of Wisconsin corporate profits that is comparable to the BEA measure.[4]

Table A.4.2 reports the Wisconsin tax rates and shares of tax borne by owners, workers and consumers for each sector. The share of the tax borne by corporate owners is determined by ratio of the national average tax rate on all capital (5.87%) is to the sector's state tax rate. Thus, for example, corporate manufacturing owners are assumed to bear 83.4% of the tax

[3] It is assumed that there is no mobility between the corporate and non-corporate capital.
[4] Total taxable income is calculated to measure income earned from current production. Thus, total taxable income is adjusted to exclude dividend income and capital gains, and to exclude deductions for bad debt and natural resource depletion, capital losses and loss carry-forwards before apportioning it to Wisconsin. See Chapter II for a discussion of Wisconsin apportionment factors. See Tannenwald (2004) for a similar approach for allocating corporate profits to Massachusetts.

(5.87%/7.03%). The remaining 16.6% is shifted to workers or consumers. Eighty percent of the shifted taxes is borne by workers and 20% by consumers. As a result workers bear 13.3% (0.80 x 16.6%) of the corporate tax on manufacturing, and consumers bear 3.3% (0.20 x 16.6%) of the tax. Because the manufacturing sector competes in international markets, it is assumed that most of this burden is shifted backward to workers in the form of lower wages. For commercial businesses, corporate owners bear 73.9% of the tax burden and most of the remaining burden is shifted forward to consumers in the form of higher prices.

TABLE A.4.2
ALLOCATION OF CORPORATE TAX BURDEN BY SECTOR

		Manufacturing	Retail/Services	Wholesale/Finance	Other
Wisconsin Effective Corporate Rate= Corporate Tax Collections/Corporate Profits (as defined by BEA)	(1)	7.0%	7.9%	8.9%	7.4%
National Average Corporate Tax Rate on All Capital	(2)	5.87%	5.87%	5.87%	5.87%
Owner's Share of Burden	(3) = (2)/(1)	83.4%	73.9%	66.0%	79.7%
Share Shifted to Labor and Consumers	(4) = 100% - (3)	16.6%	26.1%	34.0%	20.3%
Allocation between Labor and Consumers	(5)	80% labor 20% consumer	20% labor 80% consumer	50% labor 50% consumer	50% labor 50% consumer
Labor Share	(6) =(4) x (5)	13.3%	5.2%	17.0%	10.2%
Consumer Share	(7) = (4) x (5)	3.3%	20.9%	17.0%	10.2%

Sales Tax

Under the plausible variant, capital owners are assumed to bear the entire tax burden for taxes paid on capital equipment and on materials used to build nonresidential structures.[5] Sales and use taxes paid on non-capital purchases are assumed to be shifted to consumers and/or workers depending on the markets in which the sector competes.

Taxes paid on capital equipment for the manufacturing sector are assumed to equal the total sales and use taxes collected by manufacturers of industrial machinery plus the use tax paid for asset acquisition by all manufacturers plus 10% of the taxes collected by wholesale sellers of certain materials assumed to be purchased for capital improvements, e.g., remodeling of existing structures.[6]

Taxes paid on capital equipment for the non-manufacturing sector are assumed to equal the use taxes paid by non-manufacturing industries for asset acquisition plus the 90% of the taxes collected by wholesale sellers of certain materials assumed to be purchased for capital improvement.

Taxes paid on construction materials are described in Appendix 5.

[5] Analogous to the methodology used for other taxes, it is assumed that the share borne by owners equals the national average tax on capital. The Wisconsin effective tax rate is calculated by sales tax collections divided by total gross receipts of the specific industries and was equal to 0.63%. The effective national average tax rate is calculated by total state and local sales tax collections attributable to nonresidential structures and equipment divided by private fixed investment in nonresidential structures and equipment; this was equal to 1.13%. Since the Wisconsin effective tax rate on capital equipment and construction materials is less than the national average effective tax rate, business owners cannot escape this taxation and will thus bear the tax.
[6] It is assumed that the purchases of manufacturing industrial equipment are made by manufacturers. The share of purchases of certain materials for capital improvements made by manufacturers is based on U.S. Census, Wholesale Trade-Subject Series Sales of Class of Customer, 1997.

Sales and use taxes paid on capital equipment and construction materials were 13% of the total sales and use taxes paid by manufacturers and are assumed to be borne by capital owners, of which most (12.64%) are nonresidents and 0.36% are Wisconsin owners. Twenty percent of the sales and use tax on non-capital inputs paid by manufacturers is assumed to be shifted to consumers and 80% is shifted to workers. Thus, it is assumed that consumers bear 17% of the tax, of which 13.8% are out-of-state consumers (primarily from out-of-state shipments) and 3.23% are Wisconsin consumers. Wisconsin labor is assumed to bear 70% of the total state and local sales and use tax paid by manufacturers.

Taxes on capital equipment and construction materials paid by the non-manufacturing sector is estimated to be 16% of all state and local sales taxes paid by non-manufacturers; this represents the share borne by capital owners, split between nonresident owners (9.6%) and Wisconsin owners (6.4%). Sixty-seven percent of the sales and use tax paid by non-manufacturers is assumed to be shifted to consumers, with Wisconsin consumers bearing 57% of the total tax and nonresident consumers bearing 7.3%. Finally, Wisconsin labor bears 17% of the tax burden.

Property Tax

The national average effective property tax rate on non-land capital is determined by dividing total state and local property tax collections on non-land property for all states by the U.S. value of fixed assets.[7] For 2001, the national average effective property tax rate for all non-land property was 0.749%. This is detailed in Table A.4.3.

TABLE A.4.3
DERIVATION OF NATIONAL EFFECTIVE PROPERTY TAX (Non-Land), 2001

2001 U.S. Property Tax Collections ($mil.) (from U.S. Census, Government Tax Collections, 2001)		
Total	(1)	$263,689
Land	(2)	65,131
Non-Land Property Tax Collections - U.S.	(3)=(1)-(2)	$198,558
2001 Fixed Assets (millions $): (from Bureau of Economic Analysis)		
Equipment		4,410,968
Business Structures		6,767,156
Inventory		1,485,700
Consumer Durable Goods		2,829,726
Residential Structures		11,012,267
Total U.S. Non-Land Capital Stock	(4)	$26,505,817
National Effective Tax Rate on all Capital	(5)=(3)/(4)	0.749%

[7] State and local property tax collections are obtained from U.S. Census; fixed assets are based on Bureau of Economic Analysis data.

Table A.4.4 shows how the allocation of business property taxes by sector.

TABLE A.4.4
DERIVATION OF PROPERTY TAX SHIFTING

Wisconsin Property Collections (non-land)		**Manufacturing**	**Commercial***
Structures		210,472,790	277,434,398
Personalty		53,724,538	168,015,807
Total 2001 Property Tax Collections	(1)	$264,197,328	445,450,205
Source: DOR			
Wisconsin Capital Stock (2001):			
Structures		9,222,393,400	42,769,711,600
Inventory (estimated)		12,895,376,000	14,635,645,684
Personal Property(estimated)		2,354,067,900	7,333,732,300
Machinery		13,934,357,000	0
Computers		1,221,214,802	1,885,891,256
Waste Treatment		100,000,000	0
Total Wisocnsin Capital Stock	(2)	$39,727,409,102	$66,624,980,840
Source: DOR and BEA			
Wisconsin Effective Tax Rate	(3)=(1)/(2)	0.665%	0.669%
National Effective Tax Rate	(4)	0.749%	0.749%
Ratio of U.S. to Wisconsin Effective Tax Rates	(5)=(4)/(3)	112.63%	112.03%
Land Share of Total Taxes	(6)	10.3%	29.8%
Non-Land Share of Total Taxes	(7)	89.7%	70.2%
Source: DOR			
Share Borne by Capital Owners			
National Tax on all Capital (non-land)	(8) =(5) x (7)	100.0%	78.6%
Land Share	(9)=(6)	10.3%	29.8%
Total Share Borne by Capital Owners	(10)=(8)+(9)	100.0%	100.0%
Share Shifted to Non-Owners	(11)=100%-(10)	0.0%	0.0%
Share Borne by Consumers	(12)= 80% x (11)	0.0%	0.0%
Share Borne by Labor	(13)= 20% X (11)	0.0%	0.0%

*Excludes rental housing.

Wisconsin's actual 2001/02 property tax rates, as a percent of the value of all forms of capital (equipment, inventories, and structures), are calculated by dividing Wisconsin property taxes for each sector by the total amount of capital stock in the sector. The 2001 Wisconsin manufacturing tax rate is 0.65%, and the Wisconsin (non-rental) commercial rate is 0.669%.

Business owners are assumed to bear the national tax rate on all (non-land) capital as well as the land share of the property tax. Since the national average property tax rate for all capital plus the land share of the property tax exceed Wisconsin's tax rate for both manufacturing and commercial property, it is assumed that business owners bear the full burden of property taxes paid by both sectors and there is no shifting of the burden.

APPENDIX 5: SALES TAX COLLECTIONS: ALLOCATION BETWEEN CONSUMER AND BUSINESS PURCHASES

Sales tax data from the Wisconsin Department of Revenue show the sales tax collections by the industry code of the businesses that collect the sales tax. The data does not show who made the purchases - which individual or which business sector. This Appendix attempts to allocate the sales tax to the purchasers who paid the sales tax. The following tables show how the estimates for sales tax collections paid on purchases by consumers and businesses and trade were derived. The first tiers in the tables refer to the business sectors that collected the sales tax. The next tier provides a breakdown of the type of customer who paid the sales tax, i.e. whether the tax was paid initially by consumers, manufacturers or non-manufacturing businesses.

The allocation of sales tax collected by the retail, wholesale, utility, special trades, and selected services sectors are based on 1997 U.S. Census Bureau data that identify the class of customer by industry. The allocation of purchases for new construction materials is based on 1997 and 2001 U.S. Census Bureau construction data.

Where data do not exist, the allocation of business purchases is based on that sector's share of total gross state product.

Use taxes paid by business sector for supplies are allocated in the same way as the sales tax; use taxes paid for asset additions are treated as capital expenditures and treated as a direct tax on capital. It is also assumed that all purchases of industrial machinery and wholesale machinery are capital expenditures; thus the sales and use tax collections for those sectors are treated as direct taxes on capital.

CHART A.5.1
DERIVATION OF SALES AND USE TAXES PAID FOR RETAIL PURCHASES

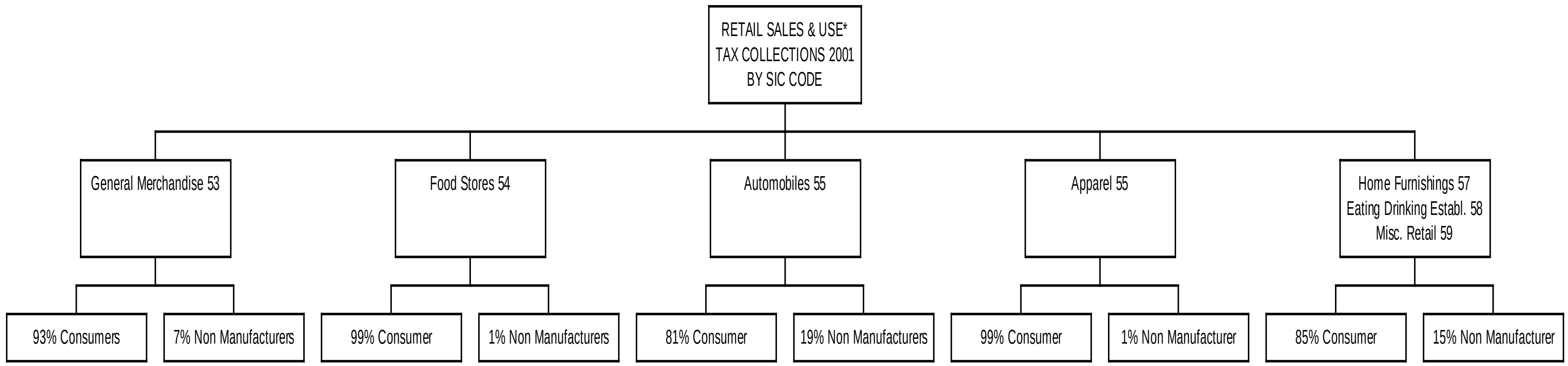
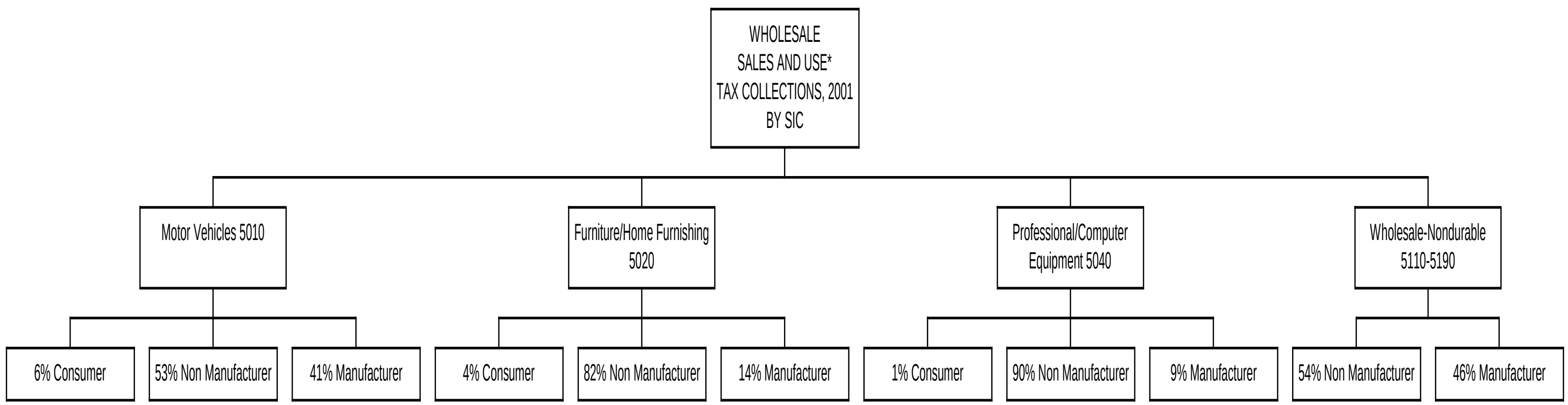


CHART A.5.2
DERIVATION OF SALES AND USE TAXES FOR WHOLESALE PURCHASES



* Use tax attributable to supplies

Sources: Census Bureau, Retail Trade - Subject Series, Table 2: Class of Customer by Kind of Business for the U.S., 1997.
Census Bureau, Wholesale Trade –Subject Series, Table 1: Sales by Class of Customer for the U.S., 1997.

CHART A.5.3
DERIVATION OF SALES AND USE TAXES PAID FOR SERVICES

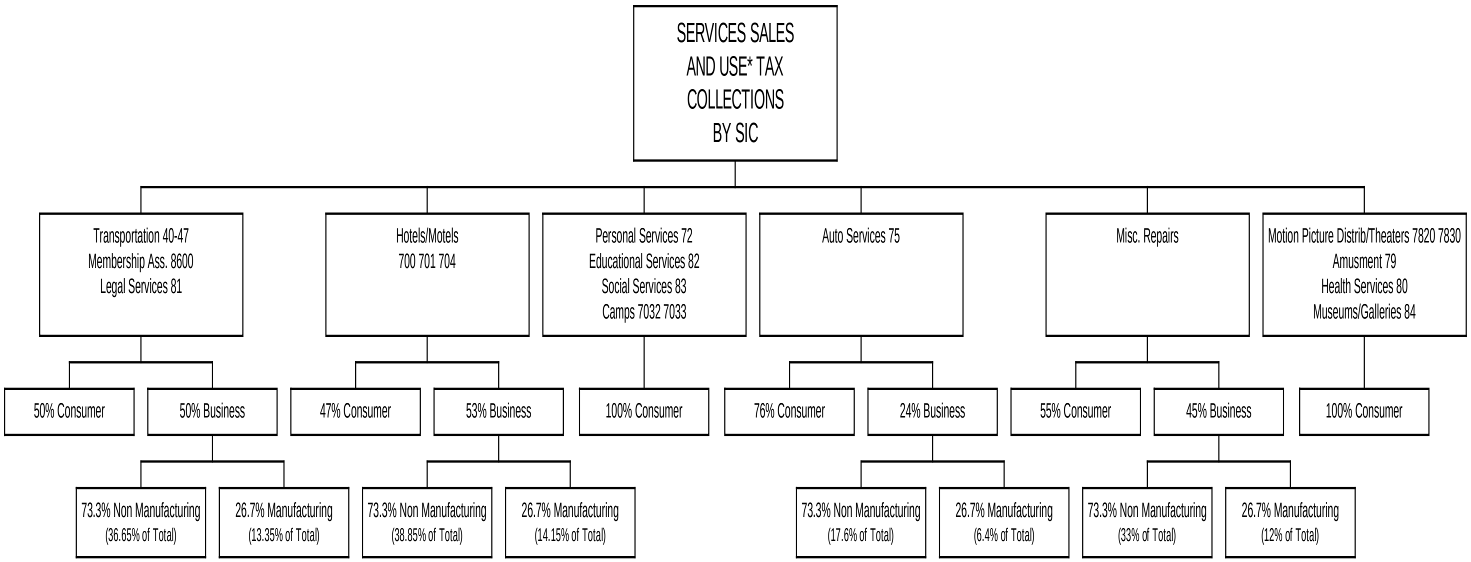
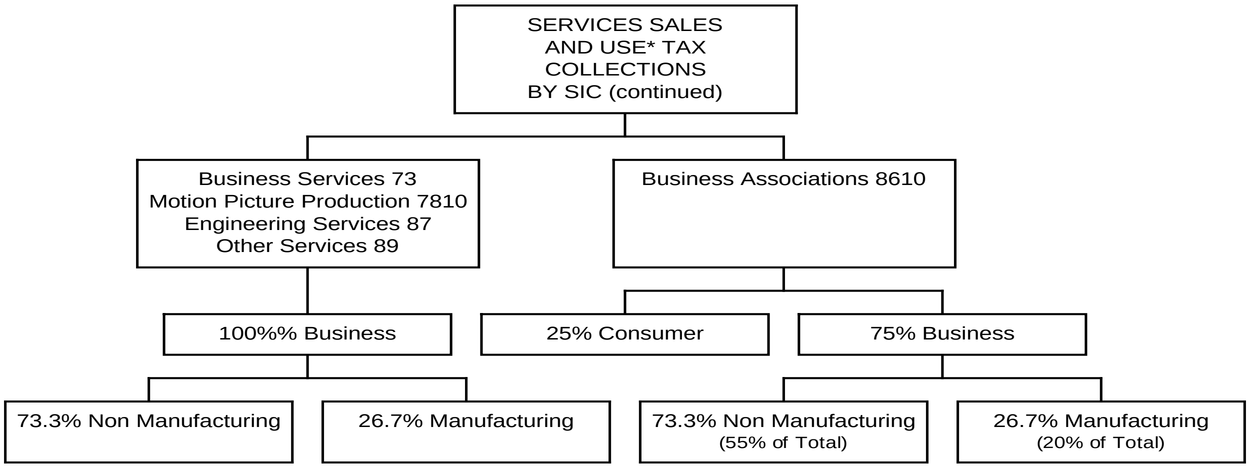


CHART A.5.3 (cont.)
DERIVATION OF SALES AND USE TAXES PAID FOR SERVICES



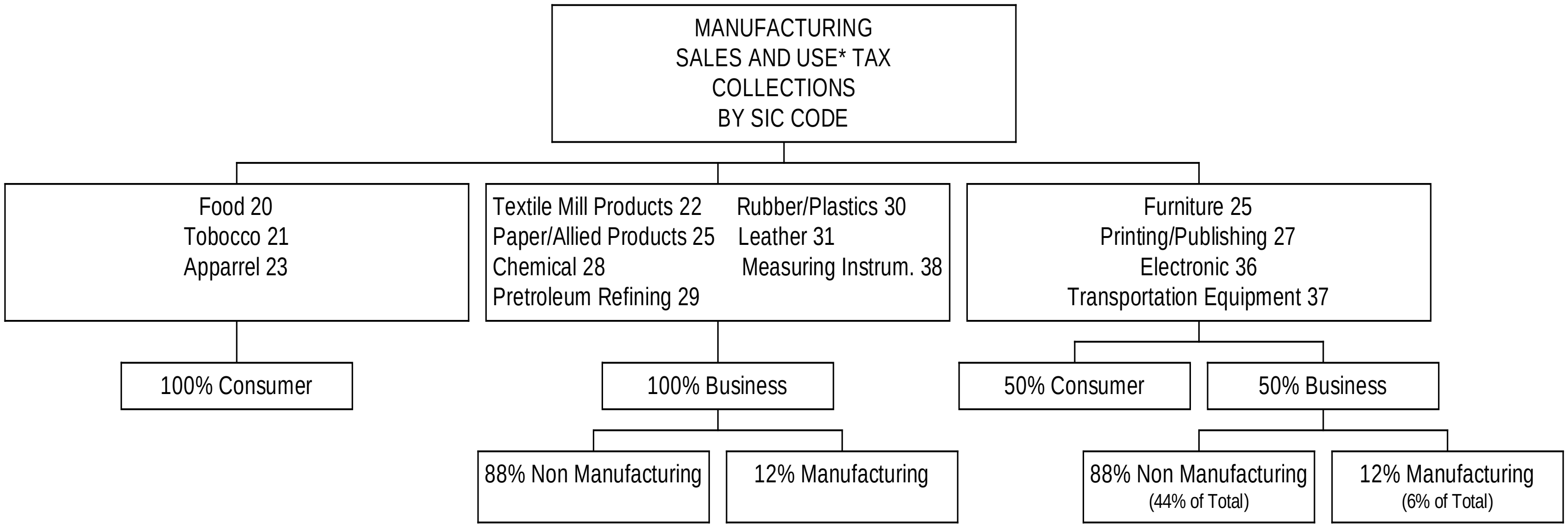
* Use Tax for supplies and costs of production

Source: U.S. Census Professional, Scientific and Technical Services – Subject Series, Table 2: Receipts by Class of Client for Selected Professional, Scientific and Technical Services for the U.S. and States, 1997.

U.S. Census Professional, Scientific and Technical Services – Subject Series, Table 3: Fees by Class of Client for Architectural, Engineering and Related Services for the U.S. and States, 1997.

U.S. Census Other Services – Subject Series, Table 2: Receipts by Class of Client for Selected Other Services for the U.S. and States, 1997.

CHART A.5.4
DERIVATION OF SALES AND USE TAXES PAID FOR MANUFACTURING PURCHASES



* Use tax attributable to supplies.

Source Department of Revenue (DOR) 2001 Sales Tax Data by SIC (for industrial machinery SIC 35 and wholesale machinery SIC 5080), DOR 2001 use tax collections by SIC, and DOR 1997 breakdown of use taxes (asset additions) by SIC.

CHART A.5.5
DERIVATION OF SALES AND USE TAX ON CONSTRUCTION-RELATED PURCHASES

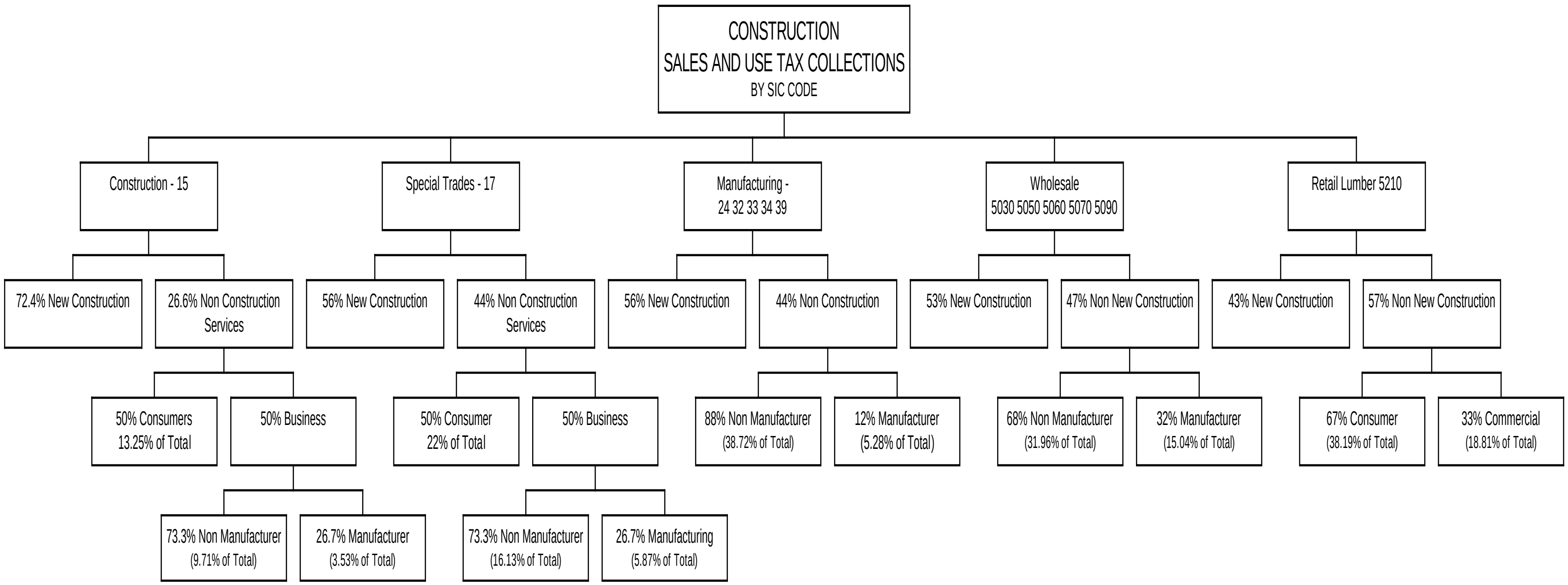
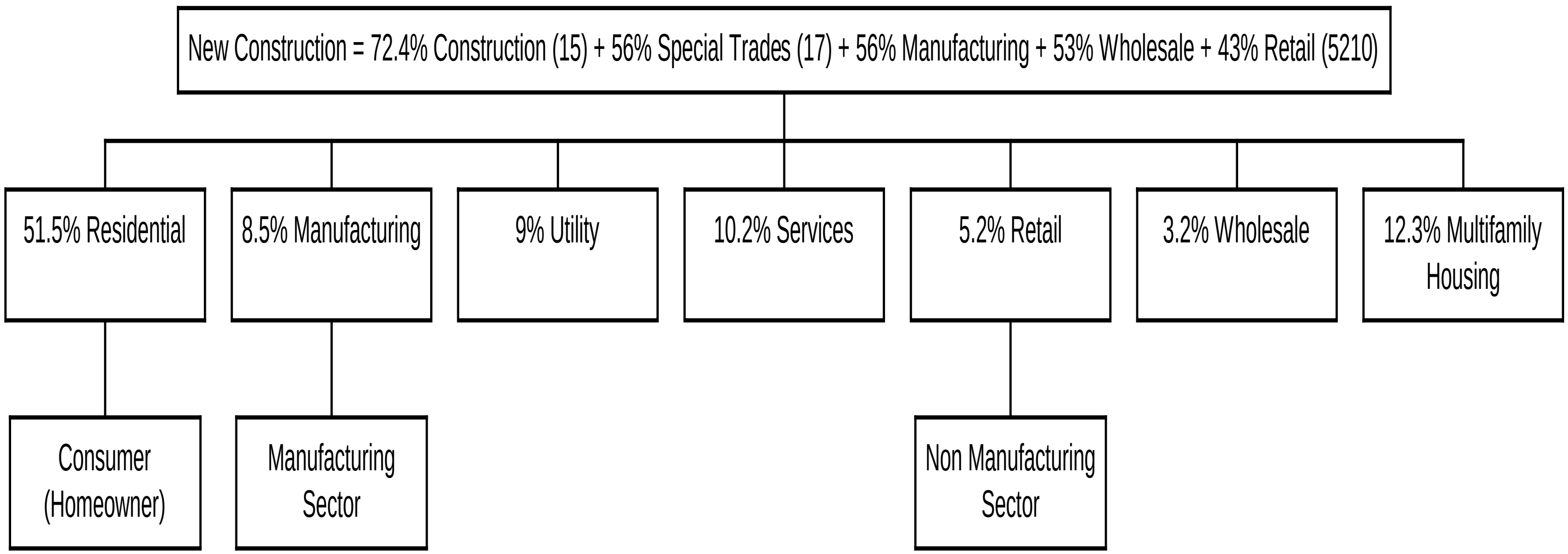


CHART A.5.5 (cont.)
DERIVATION OF SALES AND USE TAX ON CONSTRUCTION-RELATED PURCHASES



New Construction Allocation Factor

$$\text{Allocation to Sector } i = \frac{\left[\begin{array}{l}\text{\% Cost of Material}\\ \text{to Total Private Value}\\ \text{in WI in Sector } i_{1977}\end{array} \times \begin{array}{l}\text{Value of}\\ \text{Construction}\\ \text{in WI in Sector } i_{2001}\end{array}\right]}{\sum_i \left[\begin{array}{l}\text{\% Cost of Material}\\ \text{to Total Private Value}\\ \text{in WI in Sector } i_{1997}\end{array} \times \begin{array}{l}\text{Value of}\\ \text{Construction}\\ \text{in WI in Sector } i_{2001}\end{array}\right]}$$

i = Residential (single-unit)
Multi-family Housing
Utility
Manufacturing
Services
Retail
Wholesale

Data Sources:

1. Census Bureau, Value of Construction Put in Place, 2001.
2. Census Bureau Construction Industry Series.

   Table 3: General Statistics for Establishments with Payroll by State, 1997.
   Table 4: Detailed Statistics for Establishments with Payroll, 1997.
   Table 7: Value of Construction Work for Establishments with Payroll by Type of Construction, 1997.

3. Census Bureau, Construction – Geographic Services.
   Table 2: General Statistics for Establishments with Payroll by State, 1997.

4. Census Bureau, New Privately Owned Housing Units Authorized Valuation for Regions, Divisions and States, 2001.

Note:

2001Wisconsin value of construction for residential and multifamily housing was derived from authorized valuation of new privately owned housing units (Data source #4). Wisconsin 2001 value of construction for other sectors was derived from U.S. value by sector allocated by Wisconsin GDP to total GDP.

APPENDIX 6: DERIVATION OF PROPERTY TAX ON RECREATIONAL, RENTAL AND VACANT HOUSING

Property tax information is available to identify residential property. For property tax administrative purposes, residential property refers to housing of three or fewer units. However, data are not available to distinguish between primary residences and recreational homes.

Housing of more than three units is classified as commercial property for administrative purposes. Data are unavailable to distinguish commercial property that is housing, e.g., apartments, from other types of commercial property. Thus, an estimate of the property taxes on rental housing must be derived. Similarly, property taxes on recreational and vacant housing must also be derived in order to estimate the property tax burden.

The derivation of recreational, rental and unoccupied housing relied on Department of Revenue property tax data, Census data and information reported on income tax returns and homestead credit claims.

Recreational property is estimated as follows. First, the amount of property taxes reported for purposes of the school property tax rent credit or for the homestead credit was subtracted from the amount of property taxes claimed as an itemized deduction on the IRS 1040 Schedule A. This is assumed to capture taxes paid for recreational property for income tax filers who itemized their deductions.

Property taxes paid by homeowners and the property tax equivalent (PTE) for renters are reported for purposes of the school property tax credit (SPTC) claimed on Wisconsin income taxes and the homestead credit. For these programs, 20% of rent is considered the PTE if heat is included with the rent, while 25% of rent is considered the PTE if heat is not included in the rent.

Property taxes/PTE must be imputed for households that did not file taxes or claim the homestead credit. These imputations are described in Chapter III.

Total residential property taxes are attributed to: (1) recreational property taxes of Schedule A itemizers; (2) property taxes of owner-occupied housing reported by tax filers and homestead credit claimants; (3) single-unit housing assumed to be rental housing reported by tax filers and homestead credit claimants; (4) imputed property taxes for households for which no property tax information is reported; and (5) amounts assumed for vacant homes.[1] Any remaining residential property taxes are assumed to be additional recreational property.

Commercial property taxes are attributed to: (1) the PTE reported for either the school property tax credit or homestead credit (for multi-unit housing); (2) imputed PTE for households for which no tax/PTE information is reported; (3) taxes paid on vacant rental property; and (4) non-industrial property taxes, based on the residual of commercial property taxes after subtracting taxes paid by (1), (2) and (3).

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[1] Vacancy rates for single-unit and multi-unit housing are based on 2001 U.S. Census Housing Survey data.

Appendix 6 - Derivation of Property Tax on Recreational, Rental and Vacant Housing

Table A.6.1 summarizes the steps required for the derivation of recreational, rental and unoccupied housing.

TABLE A.6.1
ALLOCATION OF PROPERTY TAX FOR RECREATIONAL RENTAL AND UNOCCUPIED HOUSING

		Amount ($)	Data Source
TOTAL 2001 RESIDENTIAL PROPERTY TAXES (includes mobile home parking fee)	(1)	$4,480,931,919	DOR
Property Taxes Reported by Homeowners:			
School Property Tax Credit (SPTC) (non-farmers)	(2)	3,245,685,295	DOR 2001 Tax Model
Homestead Credit* (non-farmers)	(3)	66,657,720	DOR 2001 Tax Model
Recreational Property Taxes:			
Schedule A Itemized Deduction for Property Taxes less Property Tax claimed for SPTC	(4)	146,152,348	DOR 2001 Tax Model
Total Residential Property Taxes from Income Tax Returns	(5)=(2)+(3)+(4)	3,458,495,363	
Unaccounted for Residential Property Taxes	(6)=(1)-(5)	1,022,436,556	
Property Tax Equivalent (PTE) Reported by Renters:			
SPTC (non farmers)	(7)	702,161,653	DOR 2001 Tax Model
Homestead Credit (non-farmers)	(8)	33,063,126	DOR 2001 Tax Model
Total PTE	(9)=(7)+(8)	735,224,779	
PTE for single unit rentals	(10)=(9) x 34%	249,976,425	American Housing Survey Data, 2001
Property Tax on Unaccounted Residential	(11)=(6)-(10)	772,460,131	
Vacant	(12)=(11) x 7%	313,665,234	American Housing Survey Data, 2001
Imputed Property Tax for Non-Filers**	(13)	96,707,698	Tax Incidence Sample, Census
Recreational Property	(14)=(11)-(12)-(13)	362,087,199	
WI Owned	(15)=(14) x 75%	271,565,399	
Non-WI Owned	(16)=(14) x 25%	90,521,800	
Total Recreational Property Property Tax			
WI Owned	(17)=(15)+(4)	417,717,748	
Non-WI Owned	(18)=(16)	90,521,800	
Total	(19)=(17)+(18)	508,239,548	
TOTAL 2001 COMMERCIAL PROPERTY TAX	(20)	1,420,690,088	DOR
PTE Claimed for Multi-Family Housing	(21)=(9)-(10)	485,248,354	
Imputed PTE for Non-filers**	(22)	431,405,387	Tax Incidence Sample
Total PTE for Multi-Family Housing	(23)=((21)+(22))/.865	1,059,715,308	American Housing Survey Data, 2001
PTE for Vacant Multi-Family	(24)=(23)-(21)-(22)	143,061,567	
Other Commercial Property Tax	(25)=(20)-(23)	$360,974,780	

*Homestead credit claimants that did not file income taxes.
*Imputations were also required for tax filers who did not report property tax or PTE for the school property tax credit.

APPENDIX 7: CONSUMPTION IMPUTATIONS

Consumption imputations are required to allocate sales tax borne by consumers and to allocate business taxes that are shifted forward to consumers.

The study relies on the consumption patterns of goods and services reported in the 2001 Consumer Expenditure Survey (CES) conducted by the U.S. Department of Labor.[1] Regression analysis first estimates total household consumption of CES households as a function of income, family size, homeownership, marital status, and age of head of householder, and presence of children.[2]

Table A.7.1 shows the results of the regression analysis for total purchases and for total purchases subject to sales tax. As the table indicates, consumption increases with household size, homeownership, marital status, presence of children and income; on the other hand, consumption decreases with age.

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[1] Goods include food and alcohol for home use, furniture, flooring, major and small appliances, new and used cars and trucks, clothing, reading material, household linens, and personal care items. Services include entertainment, hotels and motels, restaurants, home and auto repair and maintenance services, educational services, rental cars, legal, financial and insurance services, and utilities.

[2] CES observations were limited to households that consumed no more than 120% of household income in total consumption. Similarly, estimated total consumption for study households was constrained to 120% of total household income. Income is defined to include income elements common to both the CES data and the Tax Incidence Study data.

TABLE A.7.1
REGRESSION RESULTS USING CES DATA TO ESTIMATE TOTAL HOUSEHOLD CONSUMPTION OF TOTAL AND TAXABLE PURCHASES

Dependent Variable	Log(Total Consumption)	Log(Taxable Consumption)
Independent Variables:	Coefficient	Coefficient
Constant	0.897*	.0653*
Midwest Dummy Variable	0	0.028*
Household Size	0.016*	0.011*
Ownership Dummy Variable	0.111*	0.088*
Marital Status	0.023*	0.019*
Over 64 Dummy Variable	-0.095*	-0.046*
Presence of Children (Dummy)	0.037	0.011*
Log(Household Income)[1]		
Poorest Household Group	0.710*	0.694*
2nd Household Group	0.714*	0.699*
3rd Household Group	0.713*	0.696*
4th Household Group	0.715*	0.695*
Wealthiest Household Group	0.716*	0.693*
R-Squared	0.774	0.730

Numbers in parentheses are standard errors.

*Statistically significant at the 99% level.

[1]Income is defined to include income sources used in the tax incidence study.
CES data do not include capital gains.

[2]CES households groups were based on quintile cut-offs of tax incidence study households.

The regression coefficients were used to estimate total consumption for the tax incidence study households. Table A.7.2 reports the estimated annual consumption by household group for these households.[3]

[3] See footnote 1 for a description of consumption items. Consumption does not include medical services and housing.

TABLE A.7.2
IMPUTED CONSUMPTION FOR
TAX INCIDENCE HOUSEHOLDS BY HOUSEHOLD GROUP

Household Group	Average Annual Consumption	Share of Income	Share of Total Consumption
Poorest 20%	$5,332	62.5%	4.8%
2nd Quintile	11,031	52.4	10.0
3rd Quintile	17,061	49.3	15.5
4th Quintile	27,129	50.0	24.7
Next 10%	38,018	48.9	17.28
Wealthiest 10%	60,844	41.8	27.7
Total	$21,996	51.9%	100.0%

The poorest 20% of households are estimated to spend, on average, $5,332 annually on goods and services (excluding housing and health care expenditures); this accounts for 62.5% of their income (as defined for imputation purposes). These households consumed 4.8% of all goods and services purchased by Wisconsin households. The highest-income 10% of households are imputed to consume $60,844 annually, comprising 41.8% of their income and accounting for 27.7% of all goods and services consumed by Wisconsin households.

The share of the total consumption going to different types of purchases was determined for each household based on a statistical match with CES data. Statistical matching uses information from one set of data to make estimates in another data set. The share of total consumption going to different types of purchases was calculated for CES households based on income, home-ownership, marital status, age of head of household and the presence of children.

The computed CES consumption shares were then matched to the study households of similar characteristics. These consumption shares were then applied to the study household's estimated total consumption to arrive at the amount of consumption of different types of goods and services.

These estimated purchases were aggregated for all households, and each household's share of the total estimated purchases was calculated. Table A.7.3 reports the average share of total consumption for each household group for different types of purchases.

TABLE A.7.3
CONSUMPTION SHARE BY HOUSEHOLD GROUPS

Household Groups	Manufactured Goods	Financial/Wholesale Services	Other Services	Food at Home	Utility
Bottom 20%	7%	4%	6%	9%	8%
Second 20%	12	8	10	13	13
Third 20%	17	14	16	17	17
Fourth 20%	25	26	25	24	24
Ninth 10%	19	23	20	18	18
Top 10%	21	25	23	19	19
Total	100%	100%	100%	100%	100%

Thus, the study estimates that the poorest 20% of households purchased 7% of all manufactured goods that were consumed by Wisconsin households in 2001. These households purchased 9% of the food purchased for home use and 8% of utilities for residential use. In contrast, the highest-income 10% purchased 21% of all manufactured goods, 19% of food purchased for home-use and 19% of residential utilities.

These shares provide an allocation mechanism for both sales tax and for business taxes shifted to consumers. For example, Table III.3 reported that, under the regressive variant, Wisconsin consumers are assumed to bear 60% of the corporate tax paid by wholesalers and businesses providing financial service. This amounted to $60.78 million. Using the shares from Table A.7.3, the top 10% of households are estimated to bear $15.195 million ($60.78 million x 25%) in the form of higher prices paid on wholesale products and financial services.

APPENDIX 8: TAX INCIDENCE OF BUSINESS TAXES

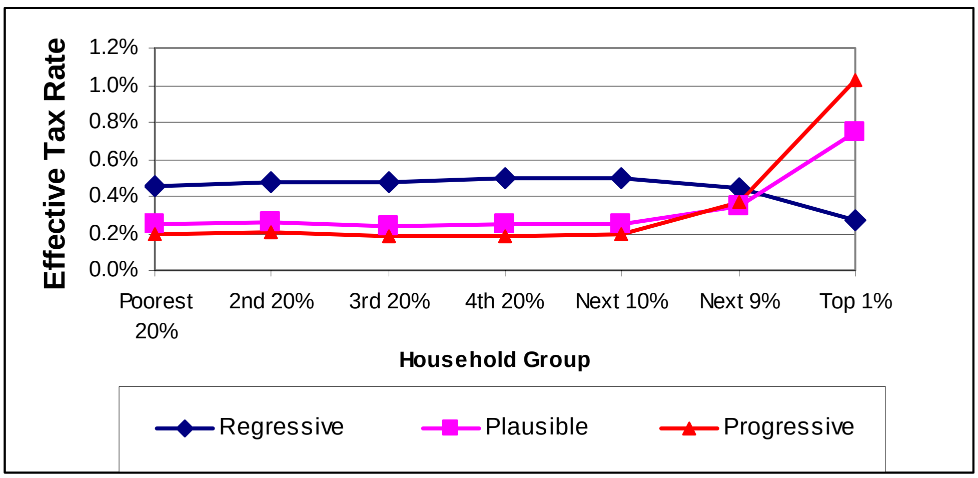
Chapter V reports the tax incidence for each tax for all collections, including taxes initially imposed on individuals and taxes initially imposed on business entities. This appendix considers the incidence of business taxes alone.

Property Taxes on (Non Rental) Business Property

Table III.9 reported the total property taxes paid by manufacturers and non-manufacturers and the shifting assumptions employed under the three variants. The regressive assumption assumes that the business property tax is borne by consumers (32%), workers (27%) and non-resident consumers (41%). The plausible and progressive variants assume Wisconsin business owners bear the largest share of non-exported business property taxes (66% and 100% respectively).

Chart A.8.1 shows the incidence of business property taxes by household group.

CHART A.8.1
INCIDENCE OF BUSINESS PROPERTY TAXES



Several things are to be noted for business property taxes. First the effective tax rate is very small for all but the highest-income households, particularly compared to the tax rates on residential property. Second, the tax appears roughly proportional under all variants for 90% of households. Under the plausible and progressive variants, the effective tax rate for the top household groups is significantly higher than for the lower income groups. This is because the owners' share of taxes are allocated to each household based on the household's share of total dividends for corporate businesses and its share of total non-corporate capital.[1] As Table IV.5 indicates, the top 10% of households group received most of investment and business income, with the top 1% receiving the largest share. Thus, these households paid the largest share of taxes that are borne by owners. Property taxes are regressive for the highest-income 10% and particularly for the top 1%. This is due to the assumption that business owners bear none of the business tax.

[1] See Chapter III for a description of the allocation of the tax burden borne by non-corporate business owners.

Corporate Income and Franchise Tax

As described in Chapter III, the regressive variant assumes corporate taxes were fully shifted to workers or consumers. The plausible and progressive variants assume corporate owners bore the majority of the corporate tax burden for all sectors except the utilities sectors. Under all variants, corporate taxes on utilities were assumed to be passed to consumers.[2]

Table V.2 reported the incidence of corporate income and franchise taxes across household groups. As discussed in Chapter V, corporate taxes were proportional across 90% to 99% of households but regressive for the highest-income households. The overall incidence of corporate taxes was regressive, as measured by the Kakwani index. This result is due in large part to the regressivity of the corporate tax on utilities.

Chart A.8.2 shows the incidence of the corporate tax on utilities. As the table reports, the corporate tax on utilities was regressive across all households.

CHART A.8.2
INCIDENCE OF CORPORATE TAXES ON UTILITIES

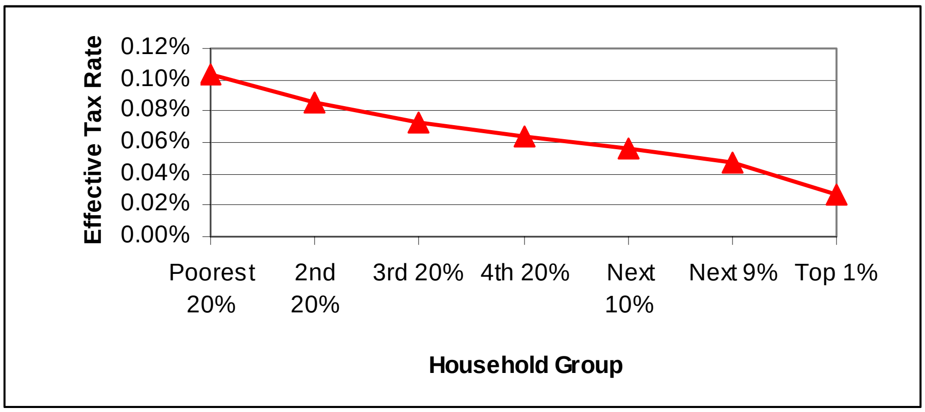
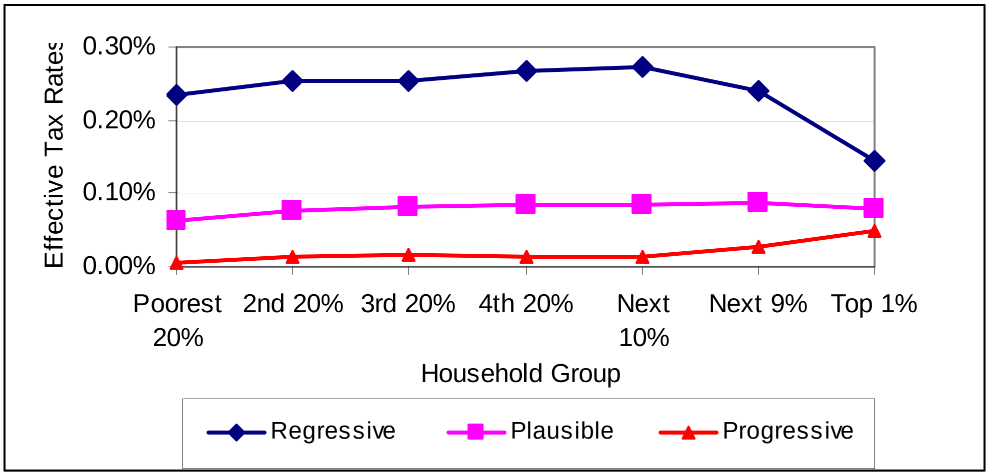


Chart A.8.3 shows the incidence of the non-utility corporate tax. Under the regressive variant, non-utility corporate taxes were slightly progressive for 90% of households but regressive for the top 10%. However, the non-utility corporate tax was proportional to slightly progressive for all households under both the plausible and progressive variants. As measured by the Kakwani index, the non-utility corporate tax was regressive overall under the regressive variant (-0.021), slightly progressive under the plausible variant (0.022) and progressive under the progressive variant (0.153).

Irrespective of the shifting assumptions, the corporate tax incidence is very small across all households due to the relatively small corporate tax collections. The rate is smallest under the progressive variant, reflecting the large degree of exporting to non-resident corporate owners.

[2]It is assumed that the corporate tax on utilities is first passed to residential users and to producers of goods and services. Similar to the treatment of other inputs to production, it is assumed that producers pass this tax to the final consumer.

CHART A.8.3
INCIDENCE OF CORPORATE TAXES (NON-UTILITIES)

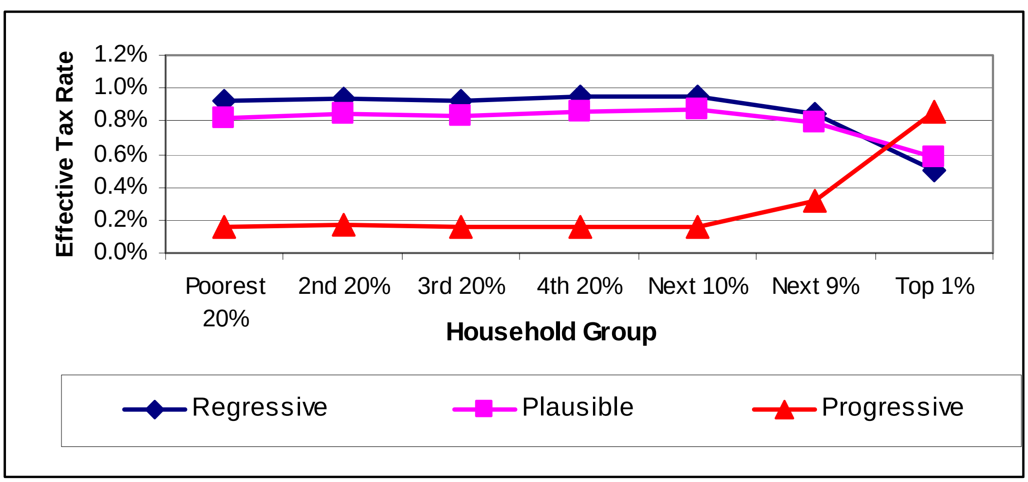


Sales Taxes on Business Inputs

As described in Table III.4, businesses paid $1.24 billion in state and county sales and use taxes on business inputs and capital expenditures. Under the regressive and plausible variants, consumers bore the largest share of the sales tax (56% and 46% respectively). Workers bore 28% of the share under both variants. The progressive variant assumes 27% of the sales tax is borne by Wisconsin business owners and the rest is exported.

Chart A.8.4 shows the tax incidence under these assumptions.

CHART A.8.4
INCIDENCE OF SALES TAX ON BUSINESS INPUTS



The similar curves for the regressive and plausible variant reflect the similar assumptions used. Both variants reveal a proportional burden for all but the top 10% of households. Under these variants, the poorest households paid around 0.85% of their income on the sales tax imposed on business purchases that were shifted to either consumers or workers; the highest-income households paid around 0.52% of their income on these taxes. The progressive variant, which assumes that most of the burden is exported, results in a proportional tax for the first 90% of households and a progressive rate for the top 10%.

Utility Taxes

Chart A.8.5 shows the incidence of utility taxes under the three variants. The shifting assumptions used for utility taxes are similar to those assumed for property taxes on business property. Thus, it can be expected the shape of the rate curves under the three variants will be similar for utility taxes as for business property taxes.

CHART A.8.5
INCIDENCE OF UTILITY TAXES ON BUSINESS USE

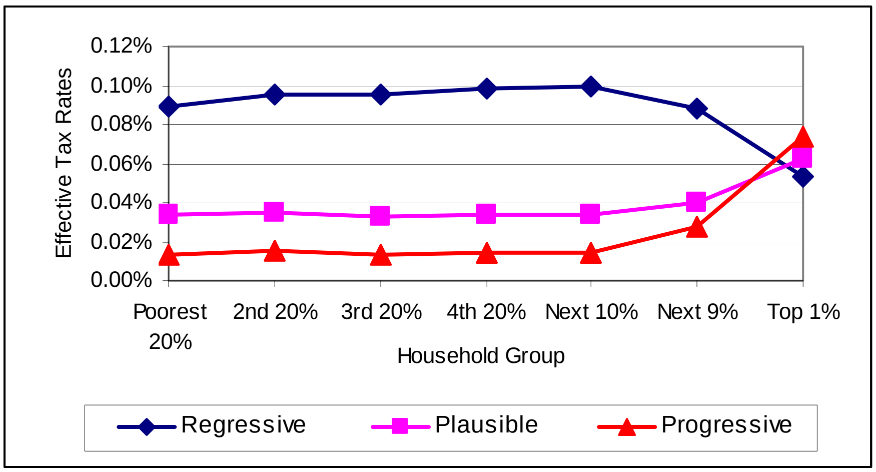
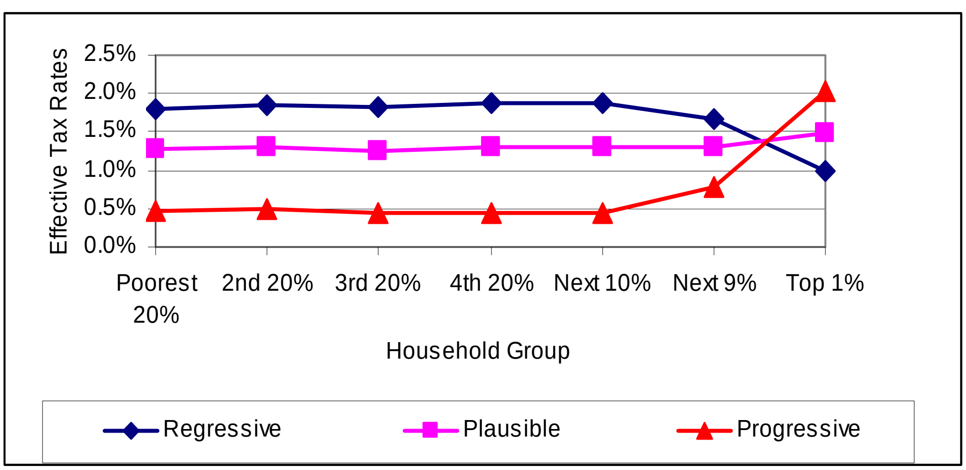


Chart A.8.6 reports the incidence for all (non-rental) business taxes combined.

CHART A.8.6
INCIDENCE OF TOTAL BUSINESS TAXES



Overall, (non-rental) business taxes were regressive under the regressive variant, with a Kakwani index equal to -0.032. Business taxes were relatively proportional under the plausible variant, with a Kakwani index equal to -0.009. Under the progressive variant, total business taxes were progressive with the highest-income households paying 2% of their income on taxes initially imposed on business, while the poorest households paid 0.5% of their income on these taxes. The Kakwani index was 0.14 under the progressive variant.

As expected, the distribution of business taxes was influenced by the assumptions made with regard the extent to which business owners were able to shift the burden of the taxes to either consumers or workers. To the extent that the regressive and progressive variants represent extreme assumptions, these variants provide the outer bounds of the overall incidence. To the extent that the plausible variant is based on more realistic shifting assumptions, it can be concluded that the total business tax burden was proportionally distributed across Wisconsin households. It can also be concluded that business taxes were a small share of the total tax burden borne by households to the extent that the effective tax rate for business taxes was quite low under all variants.

The Suits Index

As mentioned in Chapter V, an alternative to the Kakwani index is the often-used Suits index. It is very similar to the Kakwani index, except that the Suits index measures the distribution of taxes relative to the proportional share of income. The Kakwani index measures the distribution of taxes relative to the proportional share of households. Table A.8.1 reports the progressivity of Wisconsin taxes as measured by the Suits index. A comparison of these indices to those reported in Tables V.6 and V.7 shows that the two indices lead to similar conclusions regarding the vertical equity of Wisconsin taxes.

TABLE A.8.1
SUITS INDICES FOR WISCONSIN TAXES

	Regressive Variant	Plausible Variant	Progressive Variant
Total Sales Tax	-0.113	-0.108	-0.081
Consumer Purchases	-0.134	-0.134	-0.134
Business Purchases	-0.063	-0.039	0.317
Utility	-0.106	-0.081	-0.053
Residential	-0.163	-0.163	-0.163
Business	-0.055	0.093	0.317
Property Taxes [1]	-0.142	-0.055	0.061
Residential	-0.135	-0.073	0.041
Business	-0.055	0.189	0.321
Income Tax			
Indivdual[2]	0.185	0.185	0.185
Corporate	-0.073	-0.058	-0.055
TOTAL	-0.027	0.006	0.066
Total After Federal Offset	-0.057	-0.022	0.042

[1]Net of homestead, farmland preservation,and farmland tax relief credits.

[2]Net of the earned income tax credit.

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