

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

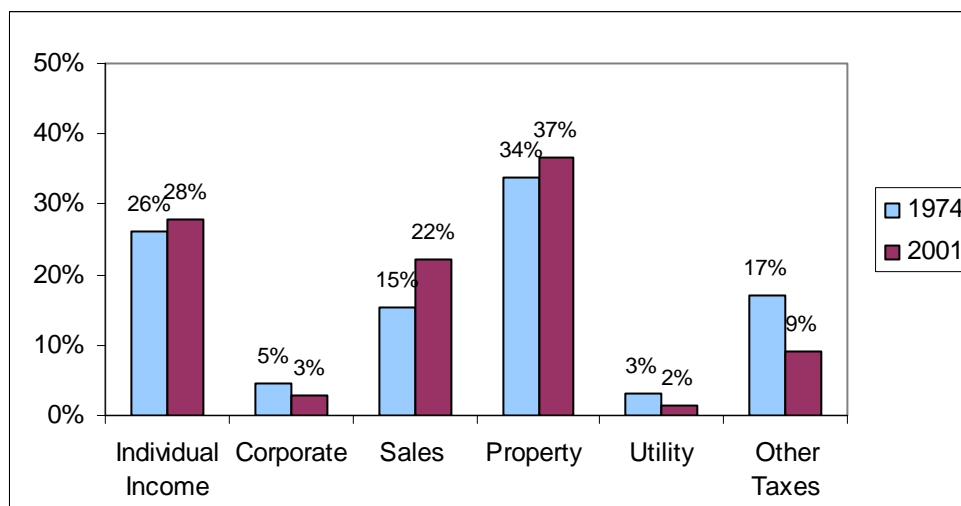
Chart A.1.1 compares the composition of total taxes in 2001 and 1974. As the table shows, reliance on the income tax, sales tax and property tax has increased while reliance on the corporate income/franchise tax and utility tax has declined compared to 1974. On its own, increased reliance on the income 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

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) <i>Disability is included as wages for pre- retirees</i>
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

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

Count of Households	Census ¹		Tax Incidence Study	
	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%

¹To 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.

²Non-filers for whom no information was available were assumed to be single.

³Based on Census-defined household (age) and family (family income). Census figures are 1999 inflated to 2001 based on BEA growth in personal income.

⁴A 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.

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 STUDY¹

Income Class ²	One-Person Households		Two-Person Households		Three-Person Households		Four-Person Households	
	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 STUDY¹

Income Class ²	Five-Person Households		Six-Person Households		Seven-Person Households		Total	
	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

¹Income 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.

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

³One-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	<u>\$15,121,157,780</u>			
	\$122,110,593,516	\$122,105,645,000	103%	WI DOR SOI
		\$114,224,632,000		
Wisconsin Adjusted Gross Income (filers only)				
Tax Incidence Study	101,744,997,330			
Excluded Filers ²	<u>4,403,297,291</u>			
	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	<u>3,981,045,945</u>			
	119,986,138,841	121,748,992,060	99%	Census (includes SSI)
Wages and Salaries				
Tax Incidence Study	79,912,751,309			
Excluded Filers ²	<u>8,582,759,626</u>			
Total Wages and Salaries	88,495,510,935	85,431,928,000		
		89,655,764,000	102%	SOI, BEA
		85,035,632,400		Census
Interest (taxable + nontaxable)³				
Tax Incidence Study	3,919,683,103			
Excluded Filers ²	<u>254,808,019</u>			
Total Interest	4,174,491,122	4,251,944,000	98%	SOI
Deferred Compensation				
Tax Incidence Study	3,380,490,506			
Excluded Filers ²	<u>88,704,720</u>			
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	<u>227,408,577</u>			
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	<u>121,004,580</u>			
Total Dividend	1,808,027,062	1,918,215,000	94%	SOI
Net Farm Income				
Tax Incidence Study	-13,683,440			
Excluded Filers ²	<u>-223,548,474</u>			
Total Net Farm Income	-237,231,914	-187,385,000	127%	SOI
Capital Gains				
Tax Incidence Study	3,587,853,953			
Excluded Filers ²	<u>323,896,389</u>			
Total Capital Gains	3,911,750,342	4,522,108,000	87%	SOI
Taxable Capital Gain³				
Tax Incidence Study	4,084,537,150			
Excluded Filers ²	<u>1,022,083,328</u>			
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	<u>1,256</u>			
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	<u>328,461,902</u>			
Total Business Income	3,085,592,878	3,084,454,000	100%	SOI
Taxable Business Income³				
Tax Incidence Study	2,745,045,712			
Excluded Filers ²	<u>341,176,550</u>			
Total Business Income	3,086,222,262	3,084,454,000	100%	SOI
Partnership & S-Corp Income⁴				
Tax Incidence Study	3,614,330,522			
Excluded Filers ²	<u>-229,470,246</u>			
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	<u>496,377,390</u>			
Total Social Security Income	9,061,375,462	8,819,982,000 9,348,948,000	100%	BEA 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	<u>41,403,986</u>			
Total Unemployment Compensation	741,399,376	766,149,000 797,750,000	95%	SOI BEA
Non Farm Rental Income	408,179,324	513,419,107	80%	SOI ⁴
Farm Rental Income²	50,963,132	<u>55,391,849</u>	92%	SOI ⁴
Excluded Filer Nonfarm + Farm Rental Income	<u>117,496,181</u>			
Total Rental Income	576,638,637	568,810,956	101%	

¹When data from two or more outside sources exist, the share is based on the average of the outside estimates.

²Tax filers that are assumed not to reside in Wisconsin at any point in the year are not included.

³Taxable for federal purposes.

⁴Estimated 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.

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, 2001¹**

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

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

²Utilization 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**

Business Taxes	Total Taxes		Business Tax Breakdown		
	Study	COST*	Study	COST (National)*	
Corporate Income & Franchise Tax	471,841,323	4,800,697,500	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%	
Taxes on Individuals					
Individual Income Taxes	4,474,394,333		17,287,197,500		
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				
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

¹ The Minnesota approach assumes a high degree of forward shifting to consumers relative to the Wisconsin study, an assumption that is highly unlikely given 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)	<u>65,131</u>
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		<u>11,012,267</u>
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**

		Manufacturing	Commercial*
Wisconsin Property Collections (non-land)			
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 Wisconsin 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

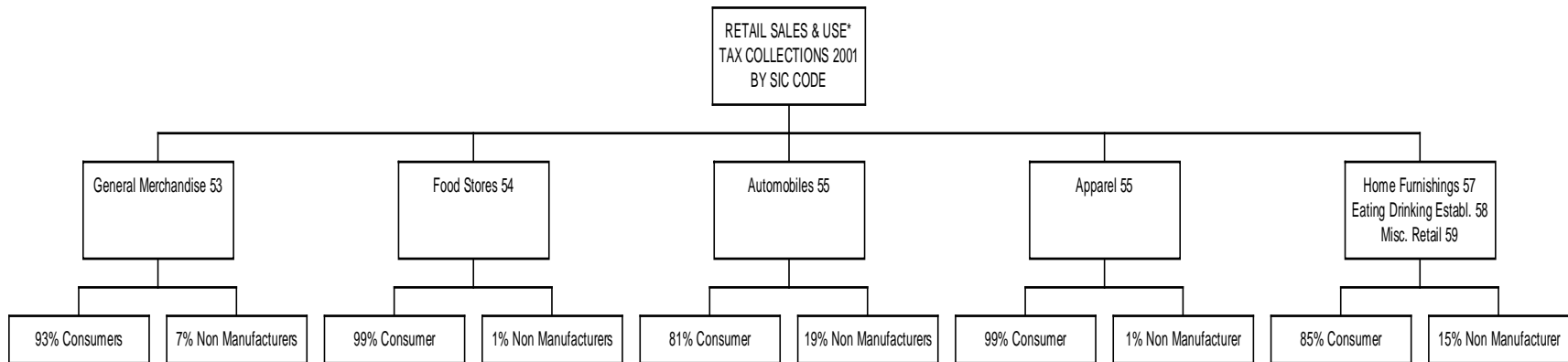
Sales tax data from the Wisconsin Department of Revenue show the sales tax collections by the industry code of the businesses that collect the sales tax. The data does not show who made the purchases - which individual or which business sector. This Appendix attempts to allocate the sales tax to the 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.

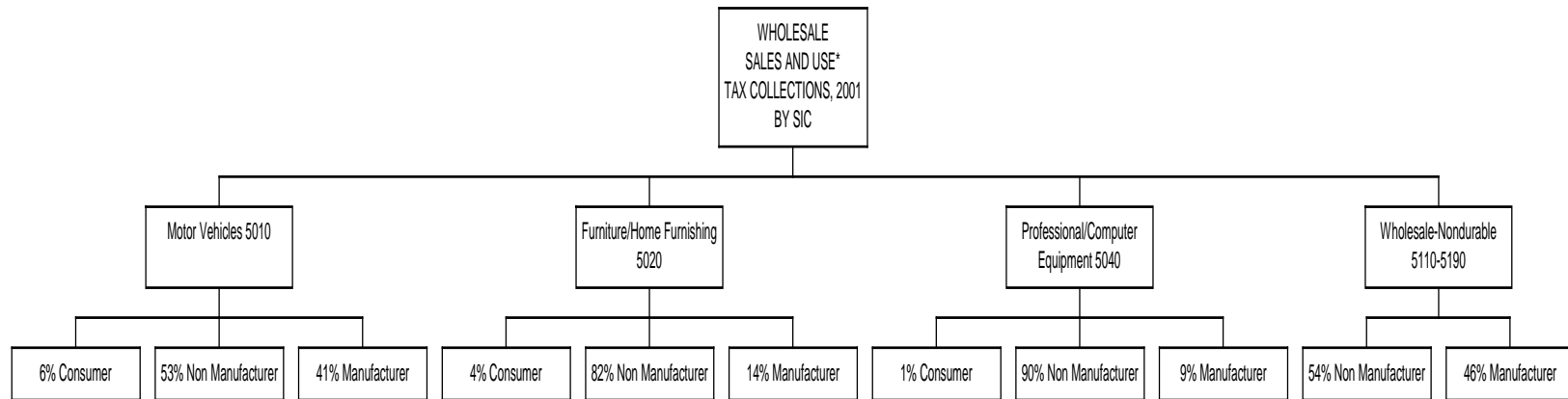
Where data do not exist, the allocation of business purchases is based on that sector's share of total gross state product.

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**



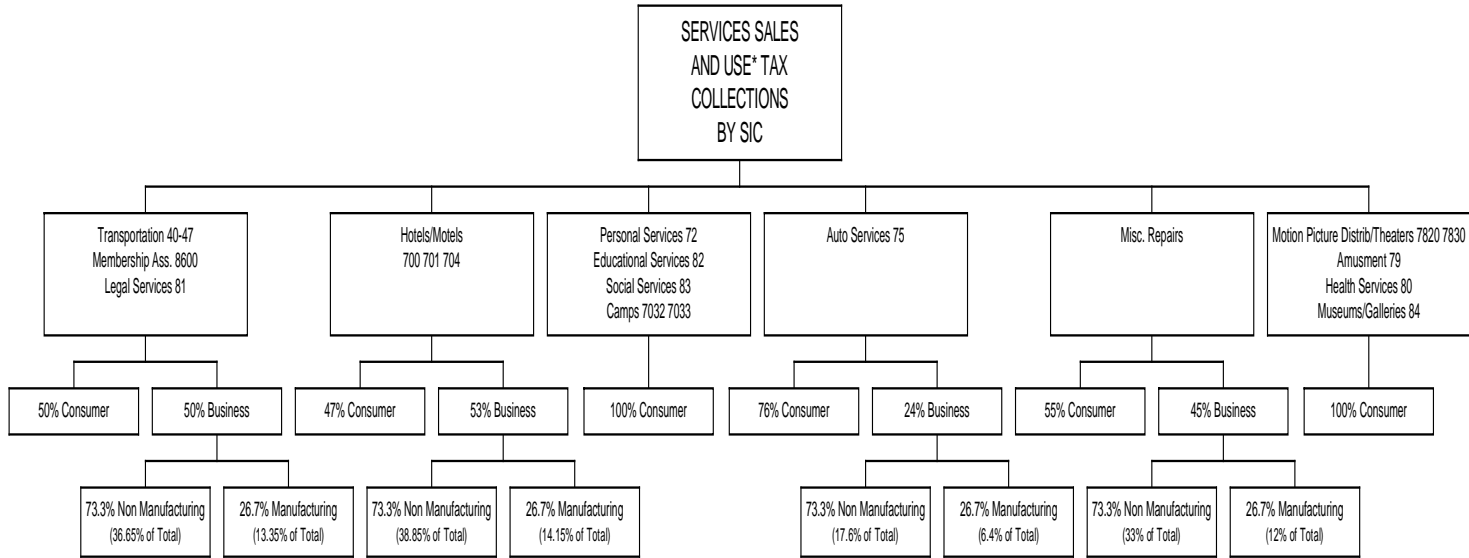
**CHART A.5.2
DERIVATION OF SALES AND USE TAXES FOR WHOLESALE PURCHASES**



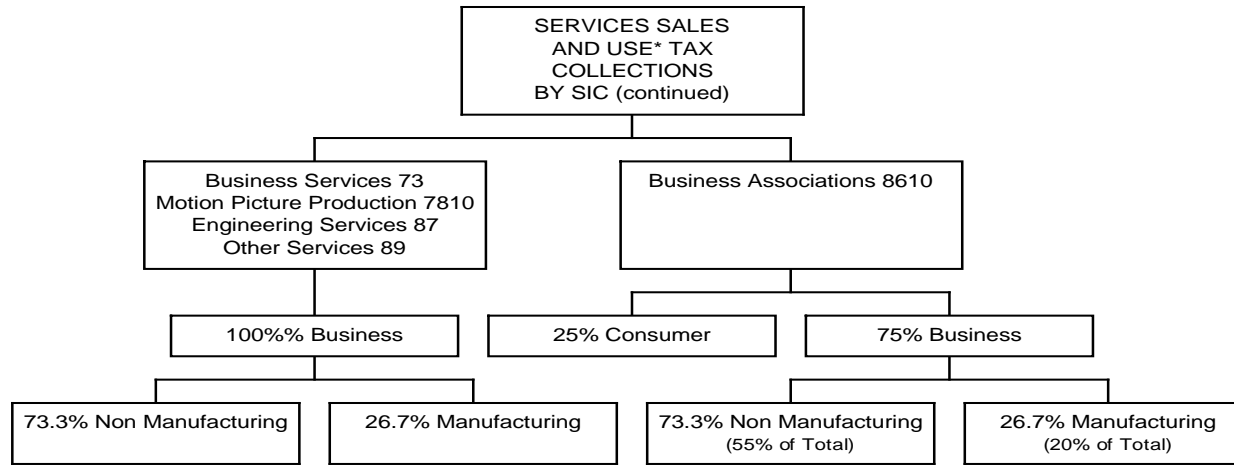
* Use tax attributable to supplies

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**



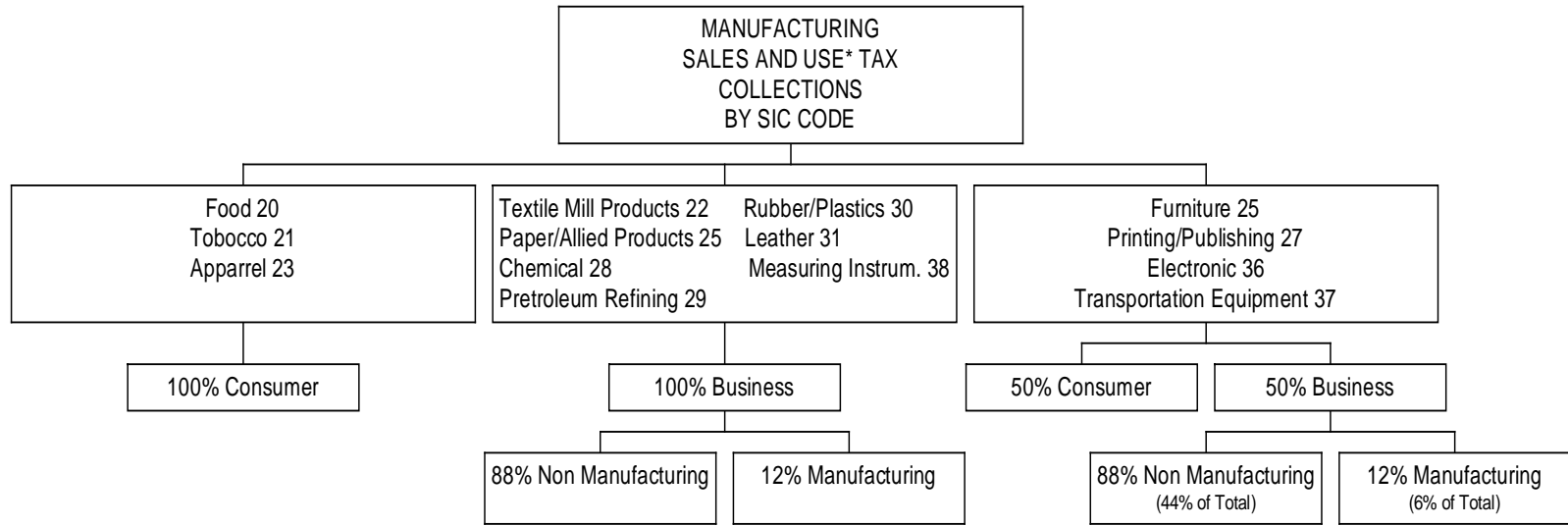
* Use Tax for supplies and costs of production

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.

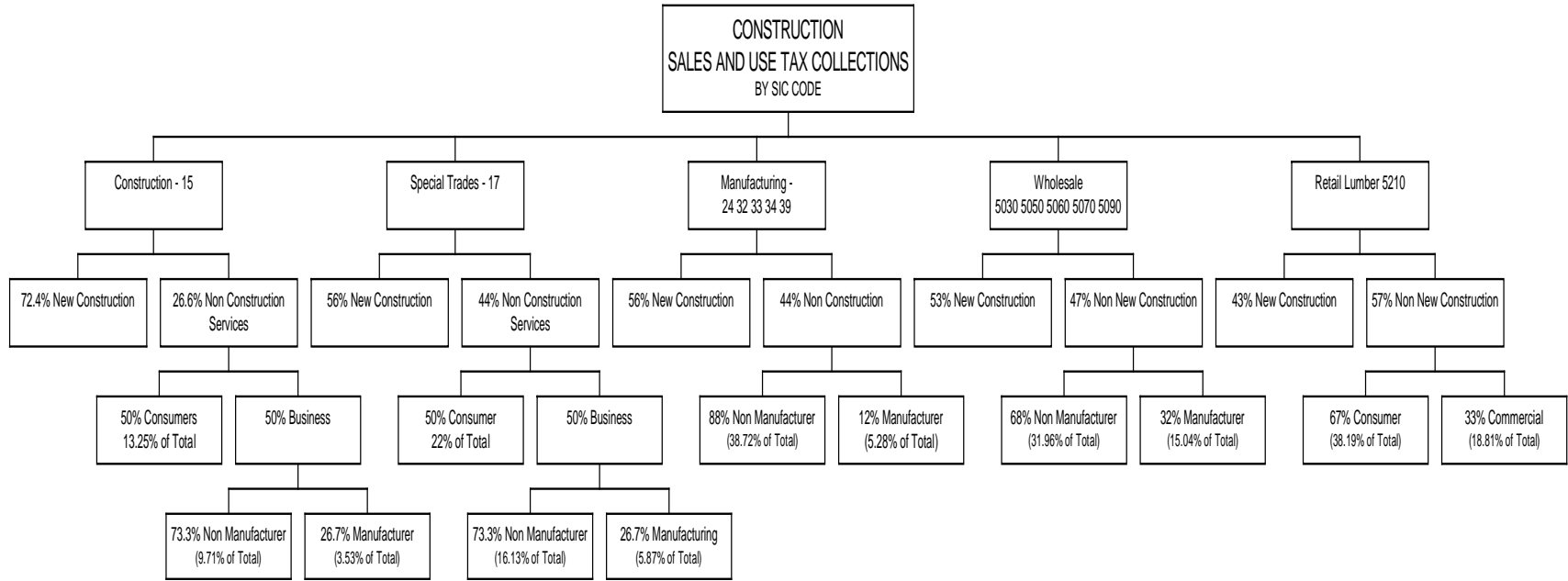
**CHART A.5.4
DERIVATION OF SALES AND USE TAXES PAID FOR MANUFACTURING PURCHASES**



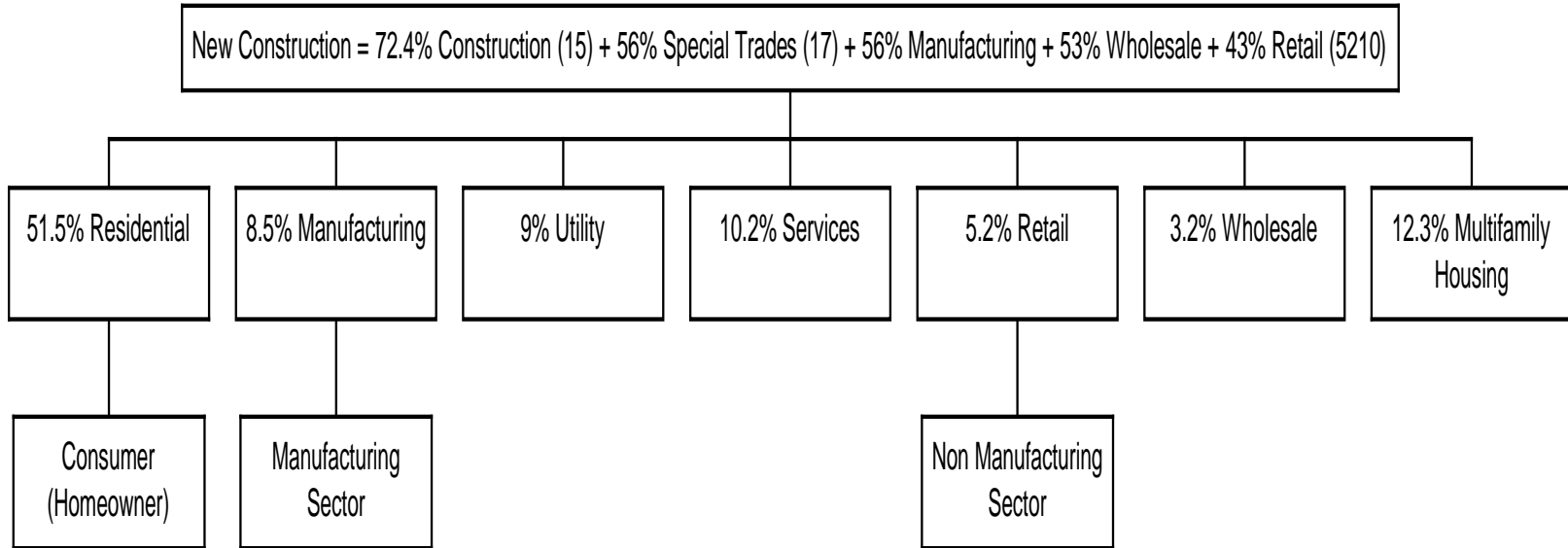
* Use tax attributable to supplies.

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

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

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:

2001 Wisconsin 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).

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

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 Vacant	(11)=(6)-(10)	772,460,131	
Imputed Property Tax for Non-Filers**	(12)=(11) x 7%	313,665,234	American Housing Survey Data, 2001
Recreational Property	(13)	96,707,698	Tax Incidence Sample, Census
WI Owned	(14)=(11)-(12)-(13)	362,087,199	
Non-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.

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.

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

²CES 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 ($\$60.78 \text{ million} \times 25\%$) in the form of higher prices paid on wholesale products and financial services.

APPENDIX 8: TAX INCIDENCE OF BUSINESS TAXES

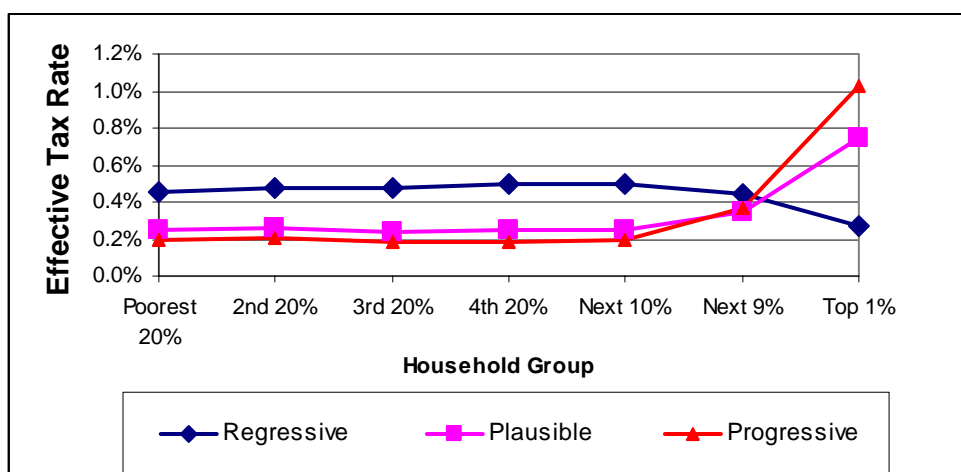
Chapter V reports the tax incidence for each tax for all collections, including taxes initially imposed on individuals and taxes initially imposed on business entities. This appendix considers the incidence of business taxes alone.

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

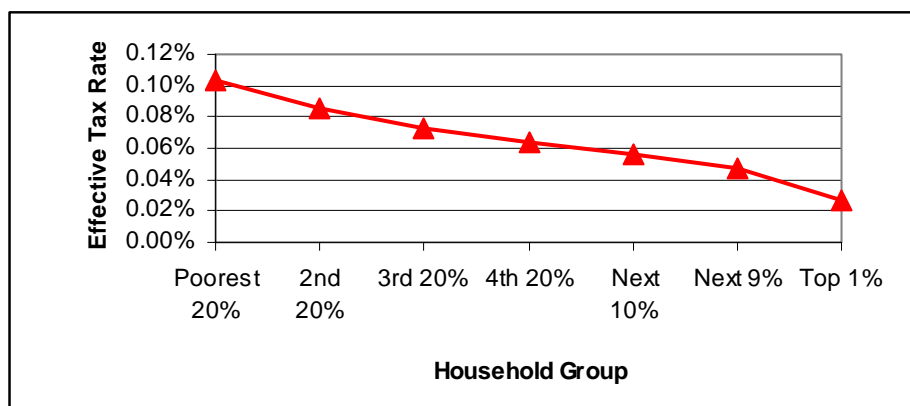
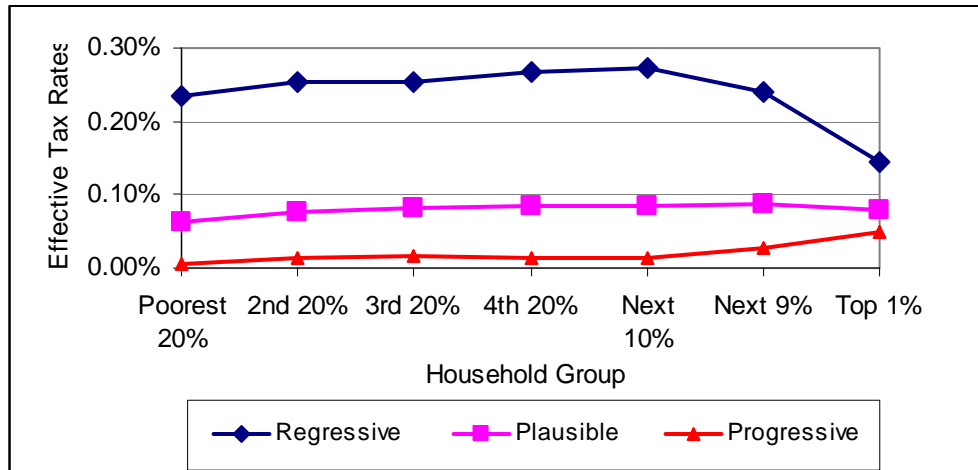


Chart A.8.3 shows the incidence of the non-utility corporate tax. Under the regressive variant, non-utility corporate taxes were slightly progressive for 90% of households but regressive for the top 10%. However, the non-utility corporate tax was proportional to slightly progressive for all households 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.

²It 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)**

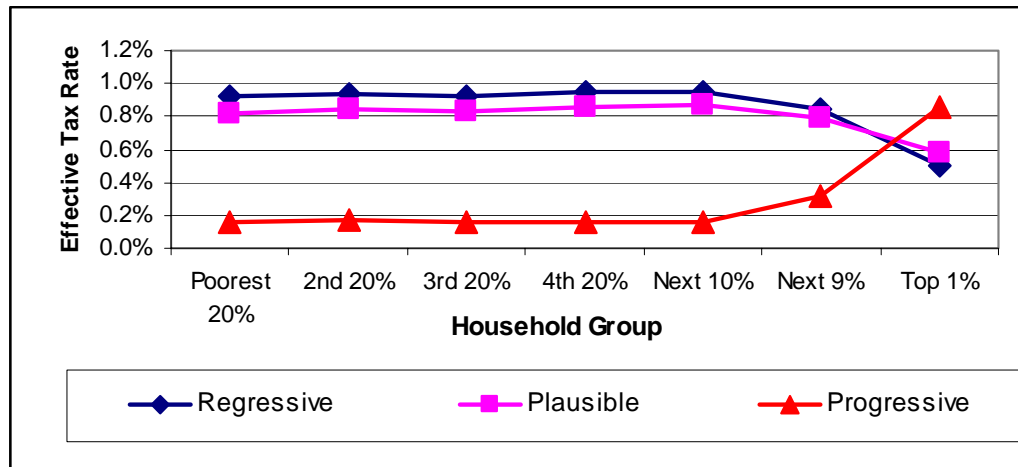


Sales Taxes on Business Inputs

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**

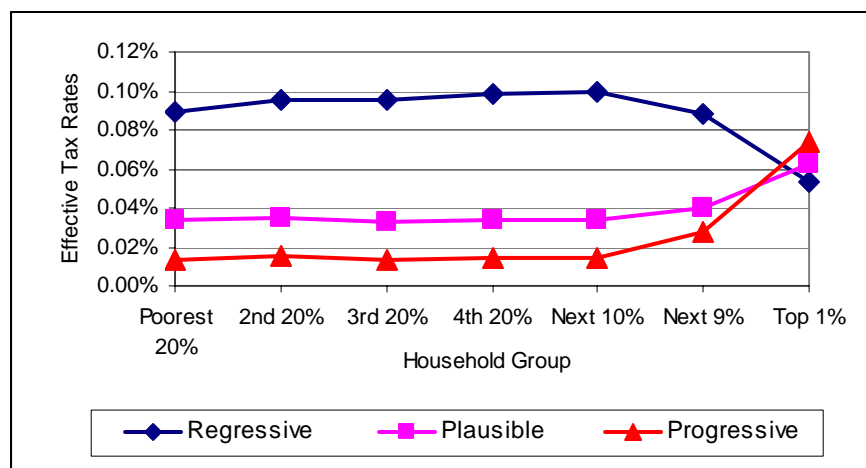
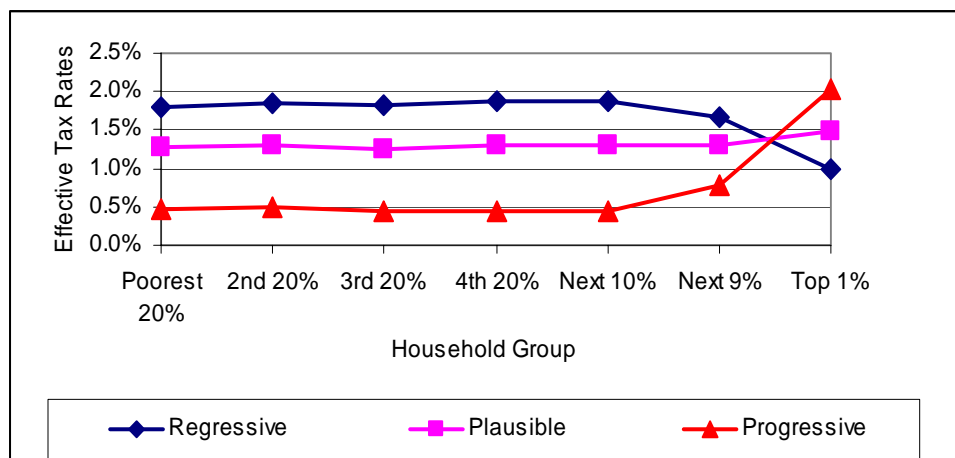


Chart A.8.6 reports the incidence for all (non-rental) business taxes combined.

**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			
Individual 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

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

²Net of the earned income tax credit.

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