

WASHINGTON TAX STRUCTURE STUDY

SIMTAX

Description of Model and Displays

The SIMTAX model has been developed for use by the Washington Tax Structure Study Committee so that members can independently determine major tax replacement alternatives and immediately calculate impacts. The results of micro-simulation from a number of different much larger models feed into SIMTAX. The dialog boxes and functions are written in Visual Basic and can be used with Microsoft Excel 97 or later versions. The model can fit on a floppy disk and is available on the Washington State Department of Revenue web site at www.dor.wa.gov/content/WAtaxstudy/Agenda.htm under the September 23 meeting heading.

Existing taxes to replace, reduce or increase include:

1. Currently existing state and local Retail Sales Taxes (0.1% rate increments). Elasticities for sales tax increases and decreases are built into the model.
2. Existing B&O, Public Utility and Property Taxes that can be adjusted as a percent of current law tax. The state's unused Property Tax capacity can be either transferred to local governments or eliminated with no transfer capacity. As a third option, local government Property Taxes can be reduced proportional to the state tax.

New tax alternatives to replace or buy down existing taxes include:

1. A flat rate Personal Income Tax (0.1% rate increments). Washington has no currently existing personal income or corporate income tax. A credit is allowed for the business and occupation taxes paid by non-corporate entities such as sole proprietorships if the B&O remains in tact. Variations include:
 - no personal exemption or deduction,
 - \$5,000 per person exemption,
 - \$20,000 standard deduction per return and
 - \$50,000 standard deduction per return.
2. A graduated rate Personal Income Tax (0.1% rate increments). Variations include:
 - no personal exemption or deduction and
 - \$20,000 standard deduction per return.
3. A Corporate Net Income Tax (0.1% rate increments) at a choice between equally weighted sales, property and payroll factor apportionment or double-weighted sales factor apportionment.

4. Value Added Taxes (0.1% rate increments) with a choice between:
 - Subtraction-Method Business Value Added Tax or
 - Progressive VAT (Hall-Rabushka Flat Tax) which taxes value added at the business level and taxes wages at the household level at the same rate. Both businesses and households receive a \$30,000 exemption.
5. A Canadian-style Goods and Services Tax (0.1% rate increments) with choices of exemptions for food, prescription drugs and medical services.

Model displays include:

1. A short summary of revenue impacts of alternative packages relative to major taxes under current law.
2. Tables and charts showing the tax burden by income level and income decile for both the alternative package and major taxes under current law.
3. Tables and charts showing the business versus household share of taxes under the alternative package and under current law.
4. Tables and charts showing reliance on the mix of taxes in the alternative package relative to current law and other states. This information is derived for the Census Bureau's *State and Local Government Finances*

MICRO-SIMULATION MODELS

Summary results from several tax micro-simulation models feed into SIMTAX. These models are a set of SAS datasets that can be programmed according to tax specifications defined by the Committee. For instance, the Committee will establish the number and level of graduate personal income tax brackets and the exemption choices for the goods and services tax. Simulation models include the following.

Business Model

The business model is a micro-simulation model containing all firms registered with the Washington's Department of Revenue and Employment Security Department. The model contains estimates of nation-wide net income and the various components needed to compute a subtraction based value added tax. Apportionment factors are also contained within the model. These include payroll, sales and property.

Minnesota Department of Revenue supplied apportionment data at the firm level of detail. Washington DOR calculated apportionment ratios by industry, size and organization type using known in-state data on revenue and wages. Over 5,000 firms operate in both Washington and in Minnesota. Direct matches of this firm data provided very accurate estimates of apportionment ratios for these firms. We assigned probabilities of apportioning to the remaining non-matching firms and estimated their apportionment factors from average relationships by industry and size of firm from the Minnesota data.

A subtraction method value added tax or a corporate income tax requires income data on firms, which are not captured in Washington's present tax system. We obtained these data from published IRS detailed statistics for corporations and partnerships on a national basis and based estimates for Washington on our mix of industry, size and organization type.

The Personal Income Model

The Personal Income Model is a stratified random sample of IRS personal income tax returns for Tax Year 1999. The sample of approximately 97,000 returns is stratified by 36 total income categories, filing status (joint/head of household or single/married filing separately), and presence or absence of Schedule C (sole proprietor) income. Sampling proportions depend on relative variance within total income categories. The sample includes one hundred percent of returns with total over \$200,000. The returns are re-weighted to future years using a constrained optimization routine. The target variables for re-weighting are total wages, interest income, dividend income, retirement income, sole proprietor income, number of joint/household returns and number of single/separate returns. Changes from the base year for these variables are derived from the State Economic Forecast.

The model includes extensive IRS data on types of income. It can be used to estimate revenue impacts on various types of income tax plans, including flat rate, graduated rate and intangible income proposals. In addition, the model can be used to analyze the impact of proposals on different income classes.

Initial Tax Incidence Model

The initial incidence, or payment, of Washington State excise and property taxes is determined by splitting total collections into shares for households, business, and state and local government. Each sector is assumed to pay an excise tax when purchasing a taxable item. Property taxes are assumed to be paid by property owners. What are not explicitly household or state and local government is defined as business.

Sales tax shares are determined by Implan commodity demands with tax exempt sales deducted. The same input-output data is used to estimate the incidence for most state public utility taxes and for all taxes on alcoholic beverages. However, public utility taxes on electricity are split out using industry data, while government payments of beer, wine, and liquor taxes are assumed to be zero. Likewise, the government's share of tobacco taxes is assumed, along with the business share, to be zero, which leaves the incidence entirely on households. Conversely, the B&O is assumed to be paid entirely by business.

Household property taxes are estimated by assessed valuation for single family homes; all other property, including all rentals, is assumed to be owned by business. Real estate excise tax shares employ methods derived by the Washington Center for Real Estate Research.

The business-household split for the motor fuels tax is based upon gasoline purchases published in *National Transportation Statistics*. Autos and half of small trucks are assumed to be household and the rest business-owned. Implan data implies that state and local governments

purchase just under one half of one percent of refined petroleum products, so the government share is assumed to be zero.

Sales and use taxes are attributed to the business, household, and governmental (state and local) sectors based on input-output data from the Washing Implan model. If all goods and services were sales taxable, each of the three sectors' share of sales/use taxes could be approximated by their share of total commodity demand ("commodities" are both goods and services). Each sector's commodity demand, however, is adjusted to reflect non-taxed and exempt items by using separately derived DOR's estimates, most found in our publication, *Tax Exemptions 2000*. The results indicate that households bear 60% of the initial incidence of sales/use taxes, with the business share 32%, and state and local government share 8%.

The household incidence of excise taxes is modeled using data from both the Washington State Population Survey and the Consumer Expenditure Survey. The two data sets were combined using a statistical procedure that matches observations based on data common to both. Observations are matched based on income, housing tenure, housing type, presence of a person over 64, presence of person under 18, and household size. The resulting database yields summary tables that are almost identical to those of the two original surveys. Combined with tax rates, this database also estimates the distribution of sales taxes by household income. Various adjustments and checks were employed to correct for under reporting of certain items and to ensure that taxes added up correctly.