

“Who Pays” and the ITEP Microsimulation Model:

Features, Applications, and Limitations

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An Introduction to the ITEP Microsimulation Model

Overview

- Introduction to ITEP
- Tax Incidence: Why? How?
- The ITEP Microsimulation Model
 - ❖ Background
 - ❖ Data sources
 - ❖ Features & capabilities
 - ❖ Results & applications
 - ❖ Caveats & limitations

An Introduction to the ITEP Microsimulation Model

Hello, My Name is ITEP

- ❖ Founded in 1980
- ❖ Based in Washington, DC
- ❖ Research focuses primarily on state tax issues, with an emphasis on tax fairness and adequacy
- ❖ Conducted comprehensive studies of state tax systems in AR, IA, IL, MN, NY, et. al.
- ❖ Conducted hundreds of smaller-scale tax analyses in over 40 states
- ❖ Testify around the nation before tax reform commissions and tax-writing committees
- ❖ In conjunction with Citizens for Tax Justice, publish a weekly e-newsletter, the *Tax Justice Digest*, that reviews the latest developments in federal and state tax policy



Why Do Tax Incidence Analysis?

- Whatever vision of fairness you implement, better to do it on purpose than by accident.
- Regressive taxes work at cross-purposes with direct anti-poverty spending.
- Evaluating mythical “middle class tax cut.”
- Gives lawmakers/public numbers it can trust in tax debates. Less uncertainty, less distrust.
- In a deficit context, fairness isn’t typically on the agenda of lawmakers.



Choices in Tax Incidence Models

- Show impact of taxes on entire population, or “representative” examples?
- Show only direct impact of taxes paid by individuals, or add “passed through” impact of business taxes? (Initial incidence v. economic incidence)



Why The “Economic Incidence” Approach?

- All taxes fall ultimately on individuals.
- Therefore, assessing only taxes that fall initially on individuals is misleading.
- Example: 1-cent sales tax hike in Idaho and Washington State. Different impact b/c different business tax bases.
- Analyzing final economic incidence captures tax base differences.



Why Not The "Representative Taxpayer" Approach?

- "Representative taxpayer" approach is subjective, and easily manipulable.
- "Typical" taxpayer hard to define.
- Too easy to cherry-pick "typical" taxpayers to buttress arguments
- Some tax proposals simply don't affect "typical" taxpayers: e.g., expand sales tax base to include tattoo parlors



Limitations of "Economic Incidence" Approach: Data, Data, Data

- What fraction of property taxes are paid by business? Not always clear
- What fraction of sales taxes are paid on business transactions? *Never* clear
- What fraction of corporate profits tax falls on in-state shareholders?
- What fraction of homeowner property taxes fall on residents of other states?
- What fraction of taxable consumption is attributable to visitors from other states?



An Introduction to the ITEP Microsimulation Model

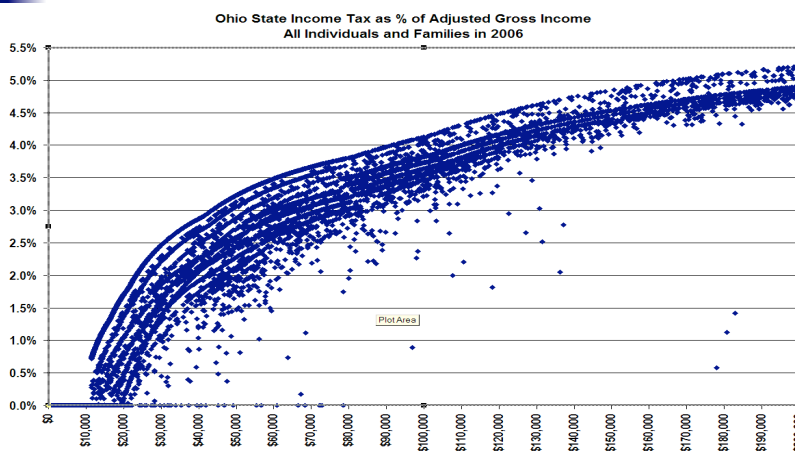
Background

- Built in 1994-1996, but still evolving in 2010
- Designed to:
 - ❖ predict the distributional effect of proposed tax changes on taxpayers at different income levels
 - ❖ predict the revenue gain (loss) from proposed tax changes
 - ❖ estimate the impact of current state and local taxes in all 50 states
 - ❖ measure the interaction between state and federal tax changes
- Consists of four basic modules: personal income tax, individual property tax, individual consumption tax, and business tax.



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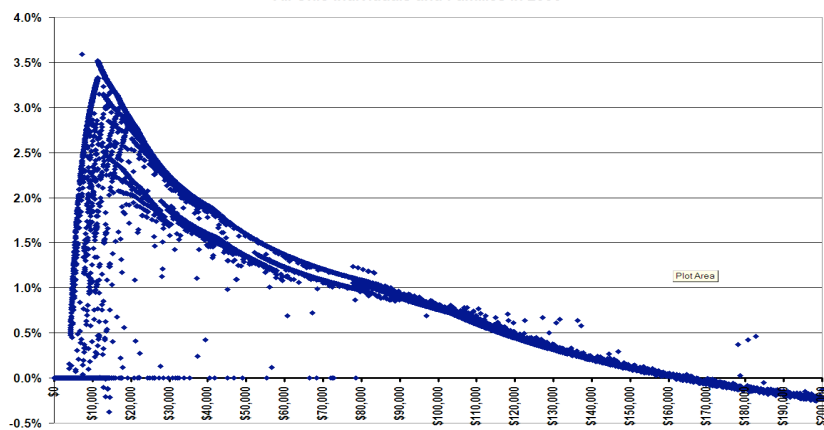
What's Behind the Numbers??



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What's Behind the Numbers??

Tax Change From Proposed Flat Tax, as % of Adjusted Gross Income
All Ohio Individuals and Families in 2006



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ITEP's Income Tax Model

- Foundation: IRS/SOI dataset from 1988. Complete info from form 1040.
- But, filers only: so we use Census 1990 PUMS data to get info on nonfilers.
- Must identify PUMS records that are likely to be nonfilers. For likely filers, PUMS data is "matched" to SOI data.
- Result: 760,000 records for 50 states/DC.

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ITEP's Income Tax Model: Aging the Data

- Step 1: "extrapolation". Change weights on original 1988 records in a way designed to hit aggregate targets in a later year (currently, 2004).
- Step 2: aging the 2004 data. Using forecasts from economy.com and CBO, age each component of income to 2010 levels (and beyond).



ITEP's (Homeowner) Property Tax Model

- For federal itemizers, we know homeowner tax liability, but don't know home value.
- For nonitemizers (and nonfilers), we know very little.
- Use statewide avg. tax parameters (tax rates, ass.ratios) to "back into" itemizer home values.
- Census PUMS data match gives us home values and property tax for nonitemizers.



ITEP's (Homeowner) Property Tax Model: Aging Home Values to 2010

- Demise of Census "Taxable Value" series in 1992 makes the job harder.
- Many states provide excellent aggregate data on residential value and tax (and tax rates)--but not apples to apples. Others provide nothing.
- American Community Survey gives aggregate data thru 2008 on value and tax, by state, age and income group.
- OFHEO "house price index" gives growth rates for home values.



ITEP's (Renter) Property Tax Model

- SOI data gives virtually no information on rent paid, for itemizers or otherwise.
- Census PUMS match assigns "renter" or "homeowner" label to all records-- and assigns rent amount where applicable.
- American Community Survey gives rent targets through 2008, by income level by state.
- Urban Land Institute survey gives property tax as share of rental income (regional, not state).



ITEP's Consumption Tax Model

- Based on Consumer Expenditure Survey, a quarterly survey of <10,000 people.
- Plus "diary" details for even smaller sample
- Problem #1: understatement of income in low-income groups.
- Problem #2: understatement of spending on selected items (vices, mostly).
- Problem #3: sample too small for state-specific imputations.



Imputing Consumption to the Database

- Estimate "lumpy" purchases of durable goods/ automobiles.
- Develop OLS regression for relationship between broad categories of consumption and income.
- Use regression coefficients to impute \$ amounts of spending in these categories for all records. Constrain cons/inc to 150% for low incomes.
- Estimate "shares" of broad consumption categories by income level. Result: 72 more detailed spending amounts for each record.
- Further ad hoc "shares" to reflect state sales tax laws.



An Introduction to the ITEP Microsimulation Model

Features & Capabilities – Scope of Analysis

The screenshot shows the 'Analysis Scope' window of the ITEP Tax Model. The parameters are as follows:

- Area:** Illinois (labeled as **State**)
- Year:** 2011 (labeled as **Year**)
- People:** Types: MFJ, Single, HOH, MFS (labeled as **Filer type(s)**)
- Children as reported on return:** Non-Dependents Only (labeled as **Family size**)
- Database:** 2004 SOI and Census, No Neg. Syn., No NAs on Rs etc. (labeled as **Age group**)
- Aging:** May 2009
- Tab Set:** CTJ5Xcen04_11_IL

There is also a **Warnings:** section at the bottom of the window.



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Features & Capabilities – Income Tax Module

The screenshot shows the 'Edit Tax' window. The parameters are as follows:

- Types of Income:** A dropdown menu at the top.
- Database of Taxes:** A list of tax codes on the left, including OH07_NoPPC, OH07_PPC, OH07_PPC1, OH07_PreTaft, OH07_TR7.5, OH07_Taft, OH08LAW, OH08_CG, OH09LAW, OH09_10%EITC, OH09_5%EITC, OH09_5EITC, OH09_Black, OH09_CG, OH09_NewEITC, and OH09_NoFloor.
- Income:** A button for selecting the income type.
- Adjustments:** A button for selecting adjustments.
- Deductions:** A button for selecting deductions (labeled as **Standard/Itemized Deductions**).
- Exemptions:** A button for selecting exemptions (labeled as **Exemptions**).
- Rates:** A button for selecting tax rates (labeled as **Tax Rates**).
- Credits:** A button for selecting tax credits (labeled as **Tax Credits (EITC, etc.)**).
- Threshold:** A button for selecting filing thresholds (labeled as **Filing Thresholds**).
- AMT:** A button for selecting Alternative Minimum Tax.
- Other:** A button for selecting other tax options.
- Note:** A button for adding a note.
- Tax is Base:** A checkbox.
- Password:** A text field.
- Done:** A button to complete the edit.



An Introduction to the ITEP Microsimulation Model Features & Capabilities – Income Tax Module

Salary & Wages

Pension & Annuity Income

The 'Income Editor' window displays two columns of income categories. The left column includes Salary & Wages, Interest, Dividend, Federal Refund, State Refund, Alimony, Schedule C, Net Cap Gains, and Other Gain/Loss. The right column includes IRA Received, Pension & Annu., Schedule E, Farm Income, Unemp Comp, Soc Sec Inc..., Other Inc..., Earned Inc, Health Care Premiums..., and Employer Pension Contrib. Each category has a checkbox for 'Taxed' and a dropdown menu for the tax rate. Some categories have a blue hatched background.

Capital Gains

Social Security Income



An Introduction to the ITEP Microsimulation Model Features & Capabilities – Income Tax Module

Tax

The 'Rates' window shows a table of Ohio income tax rates for 2006. The table has columns for MFJ, Single, HOH, MFS, Rate, and CG Max. The rates range from 0.6810% for the first \$5,000 to 6.8700% for income over \$200,000. There are also checkboxes for 'Special Top Rate for Cap. Gains?' and 'Tax Dividends at Cap Gains Rate', and buttons for 'Add Bracket', 'Insert Bracket', 'Delete Bracket', 'Clear All', and 'Base On...'. Below the table are input fields for 'Phase-Out Lower Brackets By AGI' with 'Threshold Rate' and 'Top Rate' set to 0.0000%.

MFJ	Single	HOH	MFS	Rate	CG Max.
\$0	\$0	\$0	\$0	0.6810%	
\$5,000	\$5,000	\$5,000	\$5,000	1.3610%	
\$10,000	\$10,000	\$10,000	\$10,000	2.7220%	
\$15,000	\$15,000	\$15,000	\$15,000	3.4030%	
\$20,000	\$20,000	\$20,000	\$20,000	4.0830%	
\$40,000	\$40,000	\$40,000	\$40,000	4.7640%	
\$80,000	\$80,000	\$80,000	\$80,000	5.4440%	
\$100,000	\$100,000	\$100,000	\$100,000	6.3200%	
\$200,000	\$200,000	\$200,000	\$200,000	6.8700%	

Ohio
Income
Tax
Rates
in 2006



An Introduction to the ITEP Microsimulation Model Features & Capabilities – Consumption Tax Module

Tax

Potentially Taxable Items (over 200 in all)

Rate

Taxed Items

Exemptions

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An Introduction to the ITEP Microsimulation Model Features & Capabilities – Property Tax Module

Tax Rates

Homestead Exemption

Elderly Only Provisions

Car Tax

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An Introduction to the ITEP Microsimulation Model Results & Applications – Modeling a Flat Tax Proposal

Title: Income Tax Model Tax Calculation											
Tab set: CT.J5Xcen88_06_OH											
Tax: OH06LAW											
Family: MFJ - Single - HOH - MFS		← Family									
Year: [2,006]											
Filer: Non-Dependents Only											
Database: 1988 L3 SOI and Census											
No Neg. Syn. / No NAs on Rs etc.											
Children: Children as reported on return											
Groups: All Age All Eyesight Filers											
Include: # CT.J5Xcen		Types of Income									
210											
Created: 07/19/07 13:17:36 [0.72 min]											
Computer: NORTON		AGI									
Notes:											
Tax: Returns & Dollar Amount											
Ohio OH06LAW											
Brackets (percent)	CT.J5Xcen88 cutoff	CT.J5Xcen88 Returns	CT.J5Xcen88 1000's	AGI 1000's	Wages Returns	Wages 1000's	Taxable Income 1000's	Credits Returns	Credits 1000's	Total Tax Returns	Total Tax 1000's
< 1210	1,210	52,892	929	(89,748)	15,931	28,294	-	-	-	-	-
20	17,097	1,082,568	10,999,708	6,825,656	576,610	5,238,004	5,388,188	706,975	26,061	230,283	37,330
20	29,189	1,040,355	24,139,677	18,082,472	741,852	14,834,944	15,639,869	945,506	49,190	692,726	266,718
20	46,811	1,126,716	42,552,501	36,726,729	959,499	31,709,499	33,924,099	1,108,273	88,689	1,013,850	861,925
20	73,917	1,080,761	62,714,651	53,471,759	938,863	44,274,505	49,923,320	1,077,560	213,787	1,059,896	1,463,217
15	136,563	815,075	78,009,847	71,899,769	735,458	59,287,428	68,401,775	812,879	202,136	810,996	2,577,639
4	337,442	214,342	41,189,212	35,418,665	182,590	25,109,412	34,433,970	214,224	86,532	209,784	1,663,165
1	INFINITY	56,597	52,314,370	41,139,785	49,159	16,397,144	40,881,708	56,565	35,155	56,544	2,592,747
ALL		5,469,306	311,920,894	263,475,075	4,199,962	196,879,230	248,592,931	4,921,982	701,550	4,074,079	9,462,740

Income Groups

Income

Credits



Business and Visitors Database

- Business database uses Commerce Dept. Input-Output tables to map purchases by industry across same spending categories used in consumption model.
- Visitors database based on US Travel Data Center estimates, by state, which give 6 broad categories of spending.
- ITEP “shares out” these broad categories to match the 72 categories used in estimating residential consumption.



Business Tax Incidence Assumptions

- Sales/excise taxes on businesses are divided into “local market” and “national market” components.
- Local market taxes fall on in-state consumers.
- National-market taxes fall primarily on consumers nationwide.
- In high-sales-tax states, some national market tax shifted to wages and capital.
- Business property taxes, and corporate income taxes, are generally allocated to owners of capital.
- Renter property taxes are split between renters and owners of capital.



Calculating ITEP's Effective Tax Rates: The Denominator

- Can't use tax-based income measures. “AGI” means different things in different states, and doesn't measure ability to pay.
- Need to add tax-exempt sources. Sometimes easy (tax-exempt interest); sometimes hard (unreported cap gains).
- Include low-income benefits for SSI, worker's comp, public assistance.
- Exclude taxpayers with huge business losses & “negative incomes.”

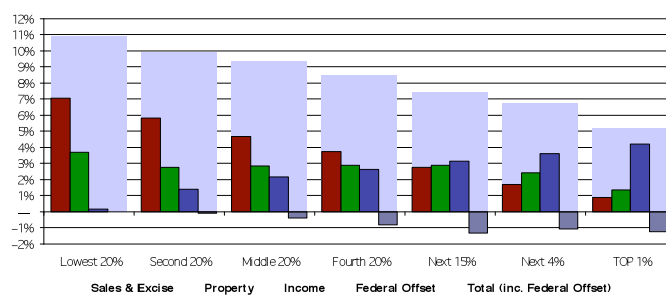


The ITEP Model at work: "Who Pays"

Averages for All States

State & Local Taxes in 2007

Shares of family income for non-elderly taxpayers



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Results & Applications – North Carolina (2007)

- Gov. Mike Easley (D) claims that his budget plan “*eliminates the state income tax for nearly 600,000 low-income taxpayers and cuts in half the tax for another 630,000*” at a cost of \$63 million.
- At request of NC Budget & Tax Center, ITEP evaluates Easley’s claim and finds that the plan would only eliminate taxes for 66,000 (10% of what governor claimed). Achieving Easley’s stated goals would actually cost \$350 million a year; EITC would offer bigger tax cuts for many at a much lower price.
- *Initial Newspaper Headline:* **Group Disputes Easley on Tax Plan for Poor Governor Stands Behind His Figures**
- *Two Days Later:* **Tax plan won't help all poor, Easley says**
The governor revises the number of people who will save, saying some do not pay taxes now
- Policy Outcome: **Earned Income Tax Credit**



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Results & Applications – Georgia (2006)

- State Senate almost unanimously approves exemption for first \$75,000 of retiree income. Media reports that bill's sponsor "did not say how much the tax break would cost the state."
- At request of Georgia Budget & Policy Institute, ITEP evaluates cost and fairness of plan and finds it would cost \$100 million annually with 3 out of every 4 dollars going to the richest 20% of seniors. Bottom 50% of seniors would receive 1% of tax cut.
- *Next Day's Front-Page Headline:* **Big Price on Senior Tax Break**
Analyst Says State Could Lose \$100 Million a Year
- Policy Outcome: **Bill Dies in House**



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Results & Applications – Ohio (2007)

- Gov. Ted Strickland (D) proposes to expand a means-tested senior property tax exemption to be available to even the wealthiest seniors.
- At request of Policy Matters Ohio (EARN), ITEP evaluates Strickland plan and develops more progressive (and cheaper) alternative. The Strickland plan was estimated to cost \$260 million, with low-income seniors receiving 1% of the benefits. Progressive alternative cost \$110 million and directed 30% of benefits to the same fixed-income seniors.
- *Cleveland Plain Dealer* **Strickland should do what's right for Ohio and amend his property tax reduction plan.**
- Policy Outcome: **Strickland Plan is Ratified**



An Introduction to the ITEP Microsimulation Model Results & Applications – Maryland (2007)

Impact of O'Malley Tax Plan All Marylanders, 2007 income levels

2007 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%
Income Range	Less Than \$20,300	\$20,300 – \$39,000	\$39,000 – \$61,600	\$61,600 – \$99,500	\$99,500 – \$198,200	\$198,200 – \$449,700	\$449,700 – Or More
Average Income in Group	\$ 12,500	\$ 29,700	\$ 49,200	\$ 77,600	\$ 133,700	\$ 280,700	\$ 1,579,000

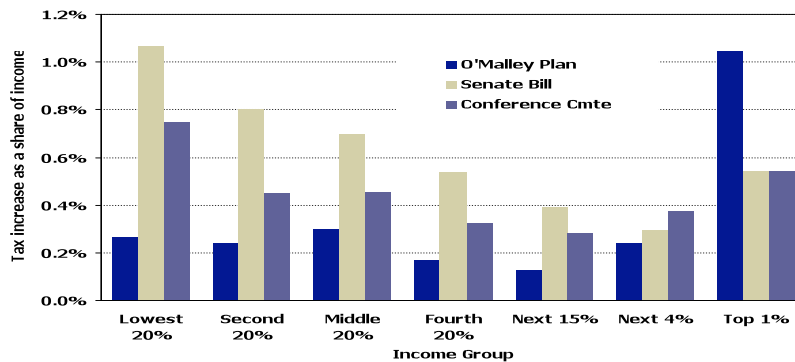
Tax Change as % of Income

Personal Income Tax Changes	-0.7%	-0.5%	-0.2%	-0.2%	-0.1%	0.1%	0.9%
Reduce State Property Tax Rate	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%
Corporate Tax Increases	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cigarette Tax Hike	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
Expand Sales Tax Base	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Increase Sales Tax Rate	0.6%	0.5%	0.4%	0.3%	0.2%	0.2%	0.1%
Motor Vehicle Titling Tax	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Total	0.3%	0.2%	0.3%	0.2%	0.1%	0.2%	1.0%



An Introduction to the ITEP Microsimulation Model Results & Applications – Maryland (2007)

COMPARISON OF THREE MARYLAND TAX REFORM PLANS





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