# METHODOLOGY

The Institute on Taxation & Economic Policy has engaged in research on tax issues since 1980, with a focus on the distributional consequences of both current law and proposed changes. Much of ITEP's research, including this report, is based on ITEP's proprietary microsimulation tax model, which estimates the amount of federal, state and local taxes paid by residents of every state at different income levels under current law and alternative tax structures.

## ABOUT *WHO PAYS?*

Since 1996, ITEP has published a series of reports that measure and compare the fairness, or incidence, of state and local taxes in all fifty states and the District of Columbia. The reports, entitled "Who Pays?," each show a single-year snapshot of state and local tax incidence, including the effects of all enacted tax changes. This is the sixth edition of this report. In general, the results of these reports are not strictly comparable with prior editions because of frequent improvements to the model's data sources and methodology.

The report shows the effect of current state and local tax laws, reflecting the effect of tax changes enacted through September 10, 2018. This includes the effect of automatic changes in state tax policy related to "The Tax Cuts and Jobs Act," Pub. L. No. 115-97, as well as law changes enacted in dozens of states in the wake of that law. In cases where tax changes enacted have not yet taken full effect, we model changes as if they were already fully implemented (we do not include tax changes dependent on a revenue trigger). This choice ensures that our analysis reflects the real long-term fairness challenges facing each state's tax system. A notable exception to this rule is state responses to the recent United State Supreme Court decision in *South Dakota v. Wayfair, Inc.* (2018), which clarified the conditions under which state sales and use taxes can be applied to sales made by businesses with no physical presence in the state. While several states have already enacted reforms designed to bolster sales and use tax collections in response to this ruling, the likely revenue impact of these changes is unclear. For this reason, our analysis excludes the impact of Wayfair-related reforms.

While the report looks at the law as it exists in 2018, our analysis is applied to the population of each state at 2015 levels, showing the amount of income, consumption and property taxes paid by residents in that year. This choice is made because as of mid-2018,

tax year 2015 was the last year for which detailed data on the amounts and composition of personal income were available on a fifty-state basis. These data, published by the Internal Revenue Service, are important in ensuring the accuracy of our analyses. These two analytical choices mean that an accurate summary of the report's approach is "2018 law at 2015 income levels."

The report's universe of taxpayers includes most, but not all, of the residents of each state. We exclude elderly taxpayers, dependent filers, and those with negative incomes; all other Americans living in each of the fifty states and the District of Columbia are included. These exclusions mean the report's universe includes all non-elderly taxpayer units, including single taxpayers, families headed by married couples, and families headed by single parents.

# TAXES INCLUDED IN THE SCOPE OF THE STUDY

The report focuses on the major state and local taxes levied in each state and in the District of Columbia. The report breaks these taxes into three broad groups: consumption taxes, including general sales taxes and specialized excise taxes; property taxes, including taxes on homes, businesses and motor vehicles; and income taxes paid by individuals and businesses. To provide a clear picture of the policy choices within the reach of each state's lawmakers, the report looks only at how the taxes collected by a given state fall on that state's residents, excluding the impact of taxes levied by other states. The taxes included in this report represent about 90 percent of all state and local taxes collected in 2015.

## SALES AND EXCISE TAXES

- The report includes the statewide general sales and use taxes levied by 45 states and the District of Columbia. The report also includes the local sales and use taxes currently levied by about two-thirds of the states. Where the base of these local taxes differs from the base of the state tax, the differences are reflected in our analysis.

- The analysis includes excise taxes on alcohol, tobacco, and motor vehicle fuels, each of which are levied by all the states and many local governments. In the increasing number of states and localities now levying special excise taxes on soft drinks or recreational cannabis, these taxes are included as well.

- The report also includes the effect of indirect consumption taxes: the sales and excise taxes that are paid initially by businesses rather than individuals. These taxes are usually passed through to consumers in the form of higher prices; a substantial fraction of these taxes are exported to these businesses' customers in other states, which means a share of these taxes are excluded from our presentation of the distributional impact of each state's taxes on its own residents.

## PROPERTY TAXES

- State and local governments levy taxes on real property (e.g., homes) and, in some states, on personal property such as motor vehicles. While locally-administered rates can vary substantially within a state, our analysis models

a uniform statewide-average tax rate on real and personal property in each state. This is necessary because the ITEP microsimulation model's unique identifiers for each record include geographic information only on the state of residence. Property taxes on rental property are distributed partly to property owners and partly to tenants. The analysis of motor vehicle property taxes includes the effect of charges levied on taxpayers registering motor vehicles, as these are close substitutes for tax policies such as value-based vehicle property taxes and even motor fuel taxes. The analysis also includes taxes levied by some states on estates and inheritances.

- A substantial share of real and personal property taxes are paid initially by businesses, and these taxes are ultimately passed through to individual business owners and/or the customers and employees of these businesses. The analysis calculates the share of property taxes falling initially on businesses — including but not limited to real property taxes, tangible personal property taxes, and inventory taxes — and allocates these taxes to residents according to their shares of capital income, wages and consumption. As is the case with the corporate income tax and consumption taxes, a substantial share of the business property tax is exported to residents of other states and is therefore excluded from our presentation of the distributional impact of each state's taxes on its own residents.

## INCOME TAXES

- Forty-one states and the District of Columbia levy broad, statewide taxes on personal income, usually based partly on federal rules. Local governments in more than a dozen states also levy income-based taxes, either on local wages or the same broad measure of personal income used at the state level. Each of these taxes are included in the analysis.

- Most states also levy entity-level taxes on corporations, usually based primarily on the amount of profits reported in the state. These taxes are also sometimes based on the value of capital stock in each state. The report includes all of these taxes. Most of the final incidence of these taxes is assumed to fall on owners of corporate stock, and about a quarter is assumed to fall on workers in the form of lower wages. Since most of the taxes paid on corporate income are typically paid by large, multi-state corporations with sales and employees in many states, a significant fraction of the corporate income tax incidence is exported to other states, and thus excluded from our presentation of the distributional impact of each state's taxes on its own residents.

# INCOME INCLUDED IN THE SCOPE OF THE STUDY

There are two broad ways in which a distributional analysis can sort taxpayers by income level. One approach, used by legislative fiscal analysts in most states, uses income definitions based on "Adjusted Gross Income." In this approach, the starting point is the

income that is actually subject to income taxes in a given state. The other approach, used by ITEP, is to use a more universal income definition, including both income that is subject to tax and income that is exempt.

For components of income that are subject to income taxes, ITEP relies on information from the Internal Revenue Service's "Statistics of Income" publication, which provides detailed state-specific information on components of income at different income levels. For components of income that are either fully or partially tax-exempt, ITEP uses data from the Congressional Budget Office and the Current Population Survey to estimate income levels in each state. The generally non-taxable income items for which ITEP makes state-by-state estimates (which are included in our measure of "total income") include: Social Security benefits, Worker's Compensation benefits, unemployment compensation, VA benefits, child support, financial assistance, public assistance, and SSI.

It's widely understood that taxpayers at all income levels tend to under-report certain income categories, especially capital gains, pass-through business income, rental income and farm income. For this reason, ITEP's modeling incorporates estimates of the amount of unreported income of each type. This unreported income is included in our "total income" estimates for each state.

## WHY THE TOP QUINTILE IS REPORTED AS THREE SUBGROUPS

The best-off twenty percent of Americans are a diverse group, including everyone from solidly middle-class couples earning $105,000 per year, all the way up to multimillionaire executives. For this reason, this study reports effective tax rates for three subgroups: the "Next 15 percent," or 80th-94th percentile, the "Next 4 percent," or 95th-99th percentile, and the "Top 1 percent."

The best-off twenty percent of Americans enjoyed more than half of nationwide personal income in 2015, according to ITEP's estimates. The best-off 1 percent of taxpayers alone enjoyed 19 percent of nationwide personal income. (By contrast, the poorest 20 percent of Americans earned about 3 percent of nationwide income.) This means that incremental differences in the tax treatment of the best-off taxpayers can have substantial implications for state tax collections.

Moreover, many states have rules in place that provide special tax breaks for capital gains and other income sources that are highly concentrated in the hands of the best-off 1 percent. An analysis showing the impact of a capital gains tax break on families in the top 20 percent of the income distribution would gloss over the substantial differences in how such a tax break treats taxpayers residing at various points throughout the top 20 percent.

## WHY THE SCOPE OF THE STUDY IS LIMITED TO NON-ELDERLY TAXPAYERS

The analyses contained in this report show the tax incidence of singles and couples, with and without children, who are under the age of 65. State tax structures routinely treat elderly families more generously than other families; for this reason, including seniors in distributional analyses of state tax systems can present an inaccurate view of how tax systems affect most families.

Virtually every state conforms to at least one of the federal government's elderly income tax breaks. All 41 states and the District of Columbia that levy broad-based income taxes

follow the federal exemption for Social Security benefits, with many states exempting them altogether. Many states allow their seniors to claim the same higher federal standard deduction.

But most income tax states go far beyond these tax preferences inherited from federal income tax rules to allow special elderly-only tax breaks of their own. Thirty-six states allow an income tax exemption for private or public pension benefits. These range from fully exempting all pension benefits for adults above a certain age (three states — Illinois, Mississippi, and Pennsylvania) to only exempting very specific benefits such as those for military veterans. More than a dozen states allow senior citizens an extra personal exemption or exemption credit, allowing these taxpayers to shelter twice as much of their income from tax as similar non-elderly taxpayers can claim.

For example, Illinois exempts all pension and retirement income from their tax base which costs the state more than $1 billion annually. If retirement income were taxed, the middle twenty percent of Illinoisans would see a tax increase equivalent to 0.2 percent of their income on average. Those in the next quintile would see their taxes increased by 0.3 percent of their income.

State and local property tax laws also provide tax breaks for senior citizens that can dramatically change the apparent incidence of property taxes.

Because so many states offer special consideration for elderly taxpayers, including elderly families in the *Who Pays?* analysis would not give an accurate depiction of how the tax structure treats the majority of taxpayers.

# THE ITEP TAX INEQUALITY INDEX

The ITEP Tax Inequality Index measures the effects of each state's tax system on income inequality. Essentially, it answers the following question: Are incomes more or less equal after state taxes than before taxes? For each state, the index compares incomes by income group before and after state and local taxes.

The index for each state equals one minus the average of the following ratios: 1) the after-tax income of the richest one percent as a share of pretax income over the after-tax income of the poorest 20 percent as a share of pretax income; 2) the after-tax income of the richest one percent as a share of pretax income over the after-tax income of the middle 60 percent as a share of pretax income; and 3) the after-tax income of the best-off 20 percent as a share of pretax income over the after-tax income of the poorest 40 percent as a share of pretax income, half-weighted.

States with regressive tax structures have negative tax inequality indexes, meaning that incomes are less equal in those states after state and local taxes than before. In states with positive tax inequality indexes, incomes are at least somewhat more equal after state and local taxes than before.

# WHAT HAPPENED TO THE FEDERAL OFFSET?

Unlike previous editions of *Who Pays?*, this 6th Edition does not include a "federal deduction offset" because of restrictions placed on the deduction by the Tax Cuts and Jobs Act. Specifically, the increased standard deduction will deny its benefits to most previous claimants, and the $10,000 cap on the deduction means that for most current claimants, the deduction will not vary significantly in proportion to state and local taxes paid. The combined result of these two changes is that the deduction no longer functions as a generalized offset of state and local taxes. These federal policy changes are in place temporarily, through the end of 2025.

# COMPARISONS TO PREVIOUS VERSIONS OF *WHO PAYS?*

The methodology used in this study is broadly similar to the approach used in previous editions of the report. However, we have recently made several methodological improvements impacting both income estimation and tax modeling. For this reason, we discourage direct comparison of the report's results with prior editions.

The effective tax rates calculated in this report also differ, in many states, from those reported in prior editions of the study because of changes attributable not to state and local tax laws but to the business cycle. Cyclical trends in components of personal income such as capital gains realizations are especially pronounced, for instance.

Long-run structural issues can also lead to changes in tax incidence over time, even absent specific changes in tax law. For example, some states' effective sales tax rates show a visible decline from the previous edition because their sales tax collections have shrunk substantially, as a share of income. This trend reflects the outdated, slow-growing tax bases in use in most states.

# ITEP MICROSIMULATION MODEL OVERVIEW

The ITEP model is a tool for calculating revenue yield and incidence, by income group, of federal, state and local taxes. It calculates revenue yield for current tax law and proposed amendments to current law. Separate incidence analyses can be done for categories of taxpayers specified by marital status, the presence of children, and age.

In computing its estimates, the ITEP model relies on one of the largest databases of tax returns and supplementary data in existence, encompassing close to three quarters of a million records. To forecast revenues and incidence, the model relies on government or other widely respected economic projections.

The ITEP model's federal tax calculations are very similar to those produced by the congressional Joint Committee on Taxation, the U.S. Treasury Department and the Congressional Budget Office (although each of these four models differs in varying

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degrees as to how the results are presented). The ITEP model, however, adds state-by-state estimating capabilities not found in those government models.

Below is an outline of each area of the ITEP model and what its capabilities are:

**THE PERSONAL INCOME TAX MODEL ANALYZES THE REVENUE AND INCIDENCE OF CURRENT FEDERAL AND STATE PERSONAL INCOME TAXES AND AMENDMENT OPTIONS INCLUDING CHANGES IN:**

- Rates, including special rates on capital gains

- Inclusion or exclusion of various types of income

- Inclusion or exclusion of federal and state adjustments

- Exemption amounts and a broad variety of exemption types and, if relevant, phase-out methods

- Standard deduction amounts and a broad variety of standard deduction types and phase-outs

- Itemized deductions and deduction phase-outs, and

- Credits, such as earned-income and child-care credits.

**THE CONSUMPTION TAX MODEL ANALYZES THE REVENUE YIELD AND INCIDENCE OF CURRENT SALES AND EXCISE TAXES.** It also has the capacity to analyze the revenue and incidence implications of a broad range of base and rate changes in general sales taxes, special sales taxes, and excise taxes on products such as gasoline and tobacco. There are more than 250 base items available to amend in the model, reflecting, for example, sales tax base differences among states and the impact of proposed expansions or reductions in the base.

**THE PROPERTY TAX MODEL ANALYZES REVENUE YIELD AND INCIDENCE OF CURRENT STATE AND LOCAL PROPERTY TAXES**. It can also analyze the revenue and incidence impacts of statewide policy changes in property tax, including the effect of circuit breakers, homestead exemptions, and rate and assessment caps.

**THE CORPORATE INCOME TAX MODEL ANALYZES REVENUE YIELD AND INCIDENCE OF CURRENT CORPORATE INCOME TAX LAW, POSSIBLE RATE CHANGES AND CERTAIN BASE CHANGES**. The majority of the corporate income tax is assigned to owners of corporate stock, with the remainder falling on labor income.

**LOCAL TAXES: THE MODEL CAN ANALYZE THE STATEWIDE REVENUE AND INCIDENCE OF AGGREGATE LOCAL TAXES (NOT, HOWEVER, BROKEN DOWN BY INDIVIDUAL LOCALITIES)** . This capacity is especially important for taxes on real and personal property, which are almost entirely levied at the local level.

# ITEP MODEL DATA SOURCES

The ITEP model is a "microsimulation model." That is, it works on a very large stratified sample of tax returns and other data, aged to the year being analyzed. This is the same kind

of tax model used by the U.S. Treasury Department, the congressional Joint Committee on Taxation and the Congressional Budget Office. The ITEP model uses the following micro-data sets and aggregate data:

## MICRO-DATA SETS:

IRS 1988 Individual Public Use Tax File, Level III Sample; IRS Individual Public Use Tax Files; Current Population Survey; Consumer Expenditure Survey; U.S. Census; American Community Survey.

## PARTIAL LIST OF AGGREGATED DATA SOURCES:

Miscellaneous IRS data; Congressional Budget Office and Joint Committee on Taxation forecasts; other economic data (Commerce Department, WEFA, etc.); state tax department data; data on overall levels of consumption for specific goods (Commerce Department, Census of Services, etc.); state specific consumption and consumption tax data (Census data, Government Finances, etc.); state-specific property tax data (Govt. Finances, etc.); American Housing Survey; Census of Population Housing; Energy Information Administration; Federal Highway Administration; BDS Analytics; s for Disease Control and Prevention.

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