



Estimating the Distributional Impact of Policy Reforms

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Distribution, Outcomes and metrics 

Distribution analysis quantifies how a policy change will differentially impact families depending on their economic and demographic characteristics like income, wealth, age, race, family size, or state of residence.¹ Typically, distribution analysis involves the following steps:

1. **Simulation:** Using a microsimulation model, simulate the effects of a counterfactual policy reform at the individual level, possibly imposing assumptions about economic incidence.
2. **Categorization:** Assign each individual unit into a group based on some dimension like income or age.
3. **Calculating summary measures:** By group, calculate summary measures of the policy reform's effect.

This page describes how we approach each step in this process. Our current focus is tax policy; this page will be updated as The Budget Lab expands the range of topics it covers and produces distribution analysis in a different policy context. The code for the calculations described below can be found [here](#).

Simulation

The starting place for estimating the micro-level impacts of a policy reform is our [tax microsimulation model](#). The tax unit—the group of people who, if required by law, would file a tax return together—is the unit of analysis in our distributional estimates. We exclude tax returns filed by those who are dependents of other tax units.

Our distributional estimates include the effects of three kinds of taxes:

- **Individual income and payroll tax and changes.** These taxes are calculated by Tax-Simulator. The incidence of individual income taxes and payroll taxes, including employer-side payroll taxes, are assumed to fall entirely on individuals.
- **Corporate tax changes.** Both economic theory and evidence indicate that the burden of the corporate income tax is borne by the owners of capital and workers. We distinguish between two types of corporate tax changes: cost recovery provisions and other provisions. For cost recovery provisions, we calculate the present value of tax liability associated with new investment using our [Cost-Recovery-Simulator](#) model and distribute the associated tax change to labor and capital in equal proportions.² For other changes, namely tax rate changes, we assume that 100 percent of the change in tax burden accrues to owners of capital in the first year of enactment, then phases down such that by year ten of a policy change and afterwards, capital's share

of the burden change is 80 percent and labor's share is 20 percent. Taxes on the owners of pass-through businesses are assumed to fall entirely on those owners, with the exception of changes due to cost recovery provisions, which are distributed as described above for C corporations.

- **Estate tax changes.** We assume that heirs, not decedents, bear the burden of the estate tax. We use a [separate model](#) based on the Survey of Consumer Finances to estimate the distributional impact of estate tax changes on heirs. We estimate a statistical model to impute inheritance receipt probabilities and values for each tax unit in Tax-Simulator. To translate individual inheritances into estate tax liabilities, we apply several conversion factors including average heirs per estate, gross-up factors for estate valuation, and calibration adjustments for high-value estates. The resulting estimates are tuned to align with established benchmarks including Joint Committee on Taxation revenue estimates and historical filing patterns under both current law and reform scenarios.

Categorization

We currently report distribution estimates by age and income. To rank tax units by age, we use the age of primary earner for joint returns. To rank tax units by income, we define income as AGI plus above-the-line deductions, nontaxable interest, nontaxable pension income (including Social Security benefits), and employer-side payroll taxes. Income percentile thresholds are calculated with respect to positive income only and are weighted by the number of nondependent adults. Note that this measure does not reflect near-cash income from transfer programs like SNAP, disproportionately understating income for lower-income families and thus overstating (the absolute value of) percent change in after-tax income at the low end of the distribution.

Calculating summary measures

There are many ways to measure the impact of a policy change. We currently report the following metrics:

- **Average tax change.** In dollars, relative to current law, how much more (or less) on average does a group owe in taxes under the reform?
- **Share with a tax cut or tax increase.** Relative to current law, what percent of tax units see their tax liability fall? What percent experience a tax increase?
- **Average tax change among those with a tax cut or tax increase.** Among those whose taxes fall under the reform, what is the average tax cut? Similarly, what's the average tax increase for tax units who owe more?
- **Percent change in after-tax income.** By how much does a tax unit's net-of-tax income change under the reform in relative terms?
- **Share of total tax change.** How much of the total budgetary effect of the reform is allocated to a given group?

Footnotes

1. Currently, the Budget Lab reports distributional effects by income and age. We are exploring modeling improvements that will allow us to report effects by race and wealth and to measure effects over time (i.e. on a longitudinal basis rather than a cross-sectional basis).

2. The distributional impacts of cost recovery changes are different from most other corporate tax changes (namely corporate tax rate changes) for two reasons. First, cost recovery rules merely shift the timing of tax payments rather than change the permanent level of taxes. Therefore, the true benefit of a more generous cost recovery schedule is not the cross-sectional revenue loss but instead the value of paying taxes later rather than sooner. Second, while corporate tax changes affect the after-tax returns to both existing capital and new investment, cost recovery rules generally impact new investment only and thus represent a smaller burden to capital overall. We follow [Tax Policy Center's modeling](#) for the 50-50 labor-capital split.