Appendix I: Cost of Capital Methodology

Overview

When computing the cost of capital, several modeling decisions must be made. Among these are whether to assume a constant debt-to-asset ratio or constant debt-to-value ratio, whether to compute the cost of capital at time t based only on time-t policy (in which firms naively ignore legislated future policy changes), and how to treat the relationship between the required rate of return faced by the firm and individual income taxes on investment income.

The cost of capital is defined as the pretax rate of return required to generate a breakeven after-tax return. That the activity on which this return is generated can be somewhat ambiguous. It can be thought of as a project, as some small independent investment, as the marginal investment on a project, or as the marginal investment for an entire firm.

The general form of cost of capital equations is given by equation (1).

$$\rho = \frac{1-Z-F}{1-\tau}(r-\pi+\delta)-\delta \tag{1}$$

In this equation, r is the nominal required rate of return on assets, π is the inflation rate, δ is the economic depreciation rate. τ is the business-level tax rate (the corporate tax rate for C corporations, or the average owner-level marginal tax rate on business income for pass-through businesses), Z is the present value of the tax shield from capital cost recovery (depreciations deductions, expensing and investment tax credits), and F is the tax shield from debt financing.

Note that the representation of the tax shield from debt financing in equation (1) is based on an assumption of a constant debt-to-asset ratio. A common alternative assumption is a constant debt-to-value ratio, in which case D_t is dropped from the equation and the flow value of the debt tax shield is subtracted from r. This formula is given in equation (2), where Δ is the debt-to-value ratio and r_d is the nominal interest rate on debt. Under economic depreciation, these two methods are equivalent, although they are not under under methods of capital cost recovery. Subsection 1.3 describes the distinction in greater detail, as well as the complications resulting from the use of a constant debt-to-value ratio when tax rates are not constant.

$$\rho = \frac{1-Z}{1-\tau}(r-\Delta\tau r_d-\pi+\delta)-\delta \tag{2}$$

Versions of this equation can generally be derived in four ways: discrete time over two periods, discrete time with an infinite horizon, continuous time flow, and continuous time over an infinite horizon. Discrete time in two periods assumes that the firm invests and begins to claim capital cost recovery deductions at time zero, realizes income at time 1, and disinvests the undepreciated (amount) at time 1. Discrete time with an infinite horizon also assumes that the firm invests and begins to claim capital cost recovery deductions at time zero, and it realizes income beginning at time 1 and thereafter in proportion to the value of capital, with the real value of capital depreciating at a constant geometric rate. If the underlying parameters and tax rules are constant, these two discrete time methods are equivalent.

In continuous time, the flow version assumes that the firm's opportunity cost of investment is $(1-Z)(r-\pi+\delta)$, namely that the investment must generate an after-tax rate of return $r-\pi$, loses value at the constant continuous time rate δ, and receives the tax shield Z from capital cost recovery. It must in turn generate the pretax gross profit $\rho+\delta$, which gets taxed at rate τ. These give the result that $(\rho+\delta)(1-\tau)=(1-Z)(r-\pi+\delta)$. In the infinite horizon continuous time version, an investment of unit 1 generates a continuous-time gross profit rate $\rho+\delta$, applied to the contemporaneous value of the undepreciated capital $e^{-\delta t}$. It pays taxes on these profits, and also receives a tax shield from capital cost recovery deductions. If the underlying parameters and tax rates are constant, these two continuous time methods are equivalent.

However, if tax rates are not constant, then some of these equations break down. In particular, the biggest challenge to this occurs because all of these equations use the present value of tax depreciation deductions (or other capital cost recovery method). With a constant tax rate, the present value of the tax shield from capital cost recovery is simply the tax rate multiplied by the present value of those deductions (ignoring investment credits). However, with tax rates that are not constant (as under current law for pass-through business income), this is not true.

The rest of this document proceeds as follows. The following section provides equations for capital cost recovery, including different forms of depreciation, expensing and investment tax credits. We then derive the infinite-horizon continuous-time cost of capital equations, allowing for time-varying or uncertain tax rates. This is particularly relevant for modeling the baseline cost of capital, as the QBI pass-through exclusion is set to expire in 2026. We then derive the present value of the tax shield from debt financing under constant debt-to-value and debt-to-asset ratios, and we show the time-inconsistency problems that arise from a debt-to-asset ratio under time-varying tax rates. We also consider the potential complications arising from the taxation of investment income for households, and we provide equations for the effective average tax rate on projects with supernormal returns, which are relevant for international investment decisions and the implications of rules for international tax policies. We also show how to include state and local taxes in this formulation.

Capital Cost Recovery

We define Z as the present value of the tax shield from capital cost recover. Methods of capital cost recovery consist of various methods of depreciation (deductions for tax purposes), expensing (immediate deduction of the invested amount), and investment tax credits.

Let D denote the present value of the deductions for capital cost recovery. Under expensing, the full amount of the investment is immediately deducted, which gives $D = 1$. Under economic depreciation (when deductions for tax purposes equal actual depreciation of the asset), the present value is

$$D = \int_0^\infty \delta e^{-(r-\pi+\delta)t} dt = \frac{\delta}{r - \pi + \delta}$$

Under straight-line depreciation, the deductions for the asset are spread over L years, with a fraction $1/L$ deducted each year (with adjustments made for timing of the investment during the year). This produces the present value

$$D = \int_0^L \frac{1}{L} e^{-rt} dt = \frac{1}{rL}\left(1 - e^{-rL}\right)$$

Under accelerated depreciation—also known as declining balance depreciation—the firm uses declining balance depreciation at rate n/L (where n is 2 for 200% declining balance and 1.5 for 150% declining balance), and switches to straight-line depreciation at time $L\left(1 - \frac{1}{n}\right)$. The present value obeys the following formula.

$$\begin{aligned} D &= \int_0^{L(1-1/n)} \frac{n}{L} e^{-\frac{n}{L}t} e^{-rt} dt + \int_{L(1-1/n)} \frac{1}{L - L(1-1/n)} e^{1-n} e^{-rt} dt \\ &= \frac{n}{rL + n}\left(1 - e^{-\left(\frac{rl}{N}+1\right)(n-1)}\right) + \frac{n}{rL} e^{1-n-rL}\left(e^{rL/n} - 1\right) \end{aligned}$$

The equations above omit bonus depreciation, in which the firm may immediately expense a share b of the investment. Including bonus depreciation requires computing D as the weighted average of 1 and the present value of the deductions, using b and $1 - b$ as the respective weights.

Let c be the effective credit rate, essentially the product of the statutory rate and the eligible fraction of investment, although the true computations are more complicated. The most common of these is the Credit For Increasing Research Activities (henceforth, the R&D tax credit), although there are also credits for renewable energy investments. Note that the relevant law intends to limit the ability of firms to double-count the investment tax credit and expensing. Firms must either reduce the depreciable basis by the amount of the credit, or they can reduce the credit by the product of the credit and the corporate tax rate. Although additional complications and rules render these methods not equivalent, with most firms electing the latter, they are equivalent in a simple mathematical framework. Under current policy, the R&D tax credit may be claimed immediately, but beginning in 2022 it must be amortized over five years. Let $\tilde{L}$ denote the amount of time over which the credit must be amortized. The entire tax shield from capital cost recovery is

$$Z = \tau(1-c)\big(b + (1-b)D\big) + \frac{c}{r\tilde{L}}(1 - e^{-r\tilde{L}})$$

Note that immediate claiming of the R&D tax credit can be achieved by taking the limit as $\tilde{L} \to 0$.

When tax rates are not constant over time, care must be taken when computing the present value of the tax shield from accelerated depreciation.

Time-Varying and Uncertain Tax Rates

When tax rates are not constant over time, the cost of capital equations should reflect that firm investment decisions are forward-looking and should include anticipated tax changes. A number of tax provisions from the 2017 tax act are scheduled to expire in 2025 (the individual income tax provisions, except for chained CPI indexing), and the international tax provisions become less generous in 2026. (The GILTI exclusion decreases from 50% to 37.5%, and the FDII exclusion decreases from 37.5% to 21.875%.)

In a general case, we allow tax rates to vary arbitrarily over time. In this situation, the after-tax rent on a project is

$$\begin{aligned} R &= -1 + \int_0^\infty (p+\delta)e^{-(r-\pi+\delta)t}dt - \int_0^\infty \tau_t\big((p+\delta)e^{(\pi-\delta)t} - d_t - \Delta r_d e^{(\pi-\delta)t}\big)dt \\ &= -1 + Z + F + (p+\delta)\int_0^\infty (1-\tau_t)e^{-(r-\pi+\delta)t}dt \\ &= -1 + Z + F + \frac{p+\delta}{r-\pi+\delta}(1-T) \end{aligned}$$

where T is the time-averaged tax rate faced by the firm, weighted by the value of the asset over time.

$$T \equiv \int_0^\infty \tau_t(r-\pi+\delta)e^{-(r-\pi+\delta)t}dt$$

In these equations, p is the profit rate of the project. For convenience, d_t refers to the tax depreciation deductions, although this can be augmented to incorporate investment tax credits.

The cost of capital is obtained by setting $R = 0$ and solving for p (and referring to it using the notation ρ). This gives the general form of the cost of capital:

$$\rho = \frac{1 - Z - F}{1 - T}(r - \pi + \delta) - \delta$$

In the case of a known future change in tax rates (such as under current law), the terms Z, F and T can be computed separating the integration. If firms are uncertain about future tax rates (e.g. assume some probability that provisions set to expire will be extended), each term Z, F and T can be computed using expected tax rates, as each of these is linear in the tax rates. The cost of capital is then computed using the expected values of Z, F and T; note that this is not equivalent to computing the expected value of ρ, as ρ is nonlinear in tax rates.

If tax rates are constant, then the infinite-horizon equation reduces to the flow rate version. If not, then longer-lived assets (those with low δ) are more exposed to future tax rate changes. Moreover, because deductions for depreciation under the modern accelerated cost recovery system are generally front-loaded relative to economic depreciation (as is expensing), relatively more of these gross profit from the project it subject to the future tax rates than the deductions.

Debt Financing

Recall that the relationship between the required return on assets r and the discount rate including the interest deduction r_w is $r_w = r_a - \Delta r_d \phi \tau$, where Δ is the debt-to-value ratio (or debt-to-asset ratio, depending on desired assumptions), r_d is the nominal interest rate on debt, and ϕ is the share of interest eligible for the net interest deduction (on a marginal investment).

There are generally two approaches to modeling the distortion from interest deductibility. One approach includes interest deductibility in the discount rate, using r_w to discount profits and the tax shield from depreciation deductions. The cost of capital under this approach is

$$\rho_1 = \frac{1 - Z_1}{1 - \tau}(r_w - \pi + \delta) - \delta$$

where Z_1 refers to the present value of the tax shield from capital cost recovery when using r_w to discount depreciation deductions.

Another approach, used in the subsections above, discounts using the required return on assets, and computes the present value of the tax shield from interest deductibility, with

$$\rho_2 = \frac{1 - F - Z_2}{1 - \tau}(r - \pi + \delta) - \delta$$

where Z_2 is the present value of the tax shield from capital cost recovery when using r to discount depreciation deductions. The present value of the tax shield from debt financing is

$$F = \int_0^{\infty} \Delta r_d \phi \tau e^{-(r-\pi+\delta)t} dt = \frac{\Delta r_d \phi \tau}{r - \pi + \delta}$$

In the following discussion, I will refer to the approach of discounting with a rate that includes the NID tax shield as the "discounting method" to the approach of separately modeling the present value of the NID tax shield as the "present value method".

The difference between the discounting method and present value method originates in a difference in assumptions. The discounting method assumes a constant debt-to-value ratio, and the present-value method assumes a constant debt-to-asset ratio. Although either of these assumptions is potentially valid, the results are not identical.

When tax rates are constant, these two methods can be compared relatively easily. The difference between them is given by

$$\rho_1 - \rho_2 = \frac{1}{1 - \tau}\Big(Z_2(r - \pi + \delta) - Z_1(r_w - \pi + \delta)\Big)$$

If depreciation deductions for tax purposes are based on economic depreciation, these two methods are equivalent, with $\rho_1 = \rho_2$. Intuitively, using economic depreciation causes tax deductions to move in proportion to residual asset value (as income does), and so the asset amount and project value (on a breakeven project or marginal investment) are exactly equal. However, in general this is not the case. Under expensing, the difference is

$$\text{Expensing:} \qquad \rho_1 - \rho_2 = \frac{\Delta r_d \phi \tau^2}{1 - \tau}$$

As MACRS depreciation is generally more front-loaded than economic depreciation, a constant debt-to-value ratio assumption will (in general) produce a higher cost of capital than a constant debt-to-asset ratio assumption.

However, when tax rates are not constant over time, these comparisons are not valid. With nonconstant tax rates, the present value method remains relatively easy to solve for, with

$$F = \int_0^{\infty} \Delta r_d \phi \tau_t e^{-(r-\pi+\delta)t} dt = \frac{\Delta r_d \phi T}{r - \pi + \delta}$$

where T is the time-averaged tax rate derived in the previous section.

On the other hand, the discounting method becomes substantially more complicated with time-varying tax rates, as the discount rate used then varies with the tax rate, which induces time-inconsistent discounting. The after-tax rent is

$$R = -1 + \int_0^\infty (p+\delta)e^{(\pi-\delta)t}\beta_t dt - \int_0^\infty \tau_t\big((p+\delta)e^{(\pi-\delta)t} - d_t\big)\beta_t dt$$

where the discount factor applied to time t cash flows is

$$\ln \beta_t = -\int_0^t \big(r - \Delta r_d \phi \tau_s\big) ds$$

The present value of the tax shield from capital cost recovery now also depends on time-varying or uncertain tax rates, which complicates its calculation. Under this framework, closed-form solutions are far more complicated, although they can be obtained.

Investor-Level Taxes

For taxes on investment income, let any variable s_f^o refer to the return to savers that invest through asset type f (debt, equity), where o denotes the form of saving. The form of saving depends on the type of investor and account, including: direct investment by individuals or households; investment by individuals through tax-preferred accounts; investment by nontaxable entities such as pension funds and endowments; foreign investors; and investment by other taxable businesses, in particular financial institutions. All of these forms of saving are relevant for corporate equity and debt financing, but pass-through equity is entirely owned by taxable individuals (and taxed accordingly), and pass-through debt is largely provided by taxable financial institutions.

Note that the expected return to saving is only subject to tax (in present value) if the savings are held in fully taxable form, such as by individuals outside of tax-preferred savings vehicles and to for-profit institutional investors, such as banks and hedge funds.

The interest rate on debt r_d can be estimated using data, and the required rate of return on corporate equity r_e can be estimated using an equity premium over the risk-free rate. Using these, the required return on assets is $r = \Delta r_d + (1-\Delta) r_e$.

Using this approach, it is possible to compute after-tax returns to savers from marginal investments. However, a complication arises when comparing two policy categories, namely that the equilibrium required returns on debt and equity may depend on investor-level taxes. Ignoring this dependency creates the appearance that policies that change after-tax returns to savers would have no effects on investment if investment responses are modeled only using the cost of capital with required returns on debt and equity held constant. These effects should be managed through a general equilibrium model that determine required returns on debt and equity using investor-level taxes. As we use a general equilibrium model when estimating investment responses, we omit any response in required rates of return when presenting METRs and EATRs.

We also present the METTRs, which represent the entire tax wedge between the pre-tax cost of capital and the average after-tax return to savers s.

$$METTR = \frac{\rho - s}{\rho}$$

The average after-tax return to savers is a weighted average of the after-tax returns to debt investors s_d and to equity investors s_e, where the debt-equity split (debt financing share Δ) varies by industry.

$$s = \Delta s_d + (1-\Delta) s_e$$

The after-tax return to lenders is

$$s_d = \omega_{d,t} r_d * (1-\tau_i) + (1-\omega_{d,t}) r_d - \pi$$

where $\omega_{d,t}$ is the share of debt held in taxable form, and τ_i is the average tax rate on interest income. The after-tax return to equity investors depends on firm type and the form of the realization of the equity value.

For pass-through businesses, the return to equity is not subject to a second layer of tax, although it is for C corporations. Thus for pass-through businesses, $s_e = r_e - \pi$, and for C corporations, the after-tax return is given by

$$s_e = \omega_{e,t}\Big(mr_e(1-\tau_d) + (1-m)(s_{cg}+\pi)\Big) + (1-\omega_{e,t})r_e - \pi$$

where $\omega_{e,t}$ is the share of equity held in taxable form, m is the share of the equity return paid out as dividends, τ_d is the average tax rate on dividend income (computed using Tax-Calculator), and s_{cg} is the after-tax return through capital gains. This return to capital gains is given by

$$\begin{aligned} s_{cg} + \pi =& w_{scg} r_e(1-\tau_{scg}) + w_{lcg}\left(\frac{1}{h_{lcg}(1-m)}\right)\ln\left(e^{h_{lcg}(1-m)r_e}(1-\tau_{lcg}) + \tau_{lcg}\right) \\ &+ (1 - w_{scg} - w_{lcg})\left(\frac{1}{h_{xcg}(1-m)}\right)\ln\left(e^{h_{xcg}(1-m)r_e}(1-\tau_{xcg}) + \tau_{xcg}\right) \end{aligned}$$

In this equation, w_{scg} and w_{lcg} are the shares of capital gains realized as short-term and long-term gains, respectively, with the remainder held until death. τ_{scg} and τ_{lcg} are the average tax rates on short-term and long-term capital gains (computed using Tax-Calculator), and τ_{xcg} is the tax rate on capital gains at death. Both long-term gains and gains held until death are adjusted for the holding periods h_{lcg} and h_{xcg}.

We use the following parameterization for the relevant shares. These weights are based on those from CBO (2014).

Table 1: Allocation of Debt and Equity Holdings

Parameter	Description	Value
$\omega^c_{d,t}$	Taxable share of corporate debt	52.3%
$\omega^p_{d,t}$	Taxable share of pass-through debt	76.3%
$\omega_{e,t}$	Taxable share of corporate equity	57.2%
m	Dividend payout share	44%
w_{scg}	Capital gains share realized short-term	3.4%
w_{lcg}	Capital gains share realized long-term	49.6%
h_{lcg}	Holding period for long-term capital gains	10 years
h_{scg}	Holding period for gains held until death	30 years

Effective Average Tax Rates

We now consider potential effects of tax changes on international investment. The international investment response is an extensive margin effect in which tax changes affect firm decisions on which countries to locate investments that generate supernormal returns. We model these incentives using effective average tax rates (EATRs). As in the cost of capital derivations, the after-tax rent on a project is given by

$$R = -(1 - Z - F) + \frac{p+\delta}{r-\pi+\delta}(1-T)$$

Recall that T is the average statutory rate faced by the firm over the life of the project. Whereas we set $R = 0$ to compute the cost of capital, here we allow the project rent to be positive, with an income rate p.

To compute the EATR, we require two more terms: the rent on the project in the absence of business taxes R^*, and the present value P of the income stream from the project.

$$R^* = -1 + \int_0^\infty (p+\delta)e^{-(r-\pi+\delta)t}dt = \frac{p-(r-\pi)}{r-\pi+\delta}$$

$$P = \int_0^\infty pe^{-(r-\pi+\delta)t}dt = \frac{p}{r-\pi+\delta}$$

The EATR is given by

$$EATR = \frac{R^* - R}{P}$$

Substituting in the solutions above and rearranging gives the following representation of the EATR.

$$EATR = \left(\frac{p-\rho}{p}\right)T + \left(\frac{\rho}{p}\right)METR$$

The EATR is a weighted average of the average statutory rate rate and the METR, where the weight on the average statutory tax rate is the share of the project income rate in excess of the cost of capital.

When considering international investment incentives for projects with supernormal returns, it is critical to incorporate the effects of the Foreign Derived Intangible Income (FDII) exclusion and the Global Intangible Low-Taxed Income (GILTI) provision. Each of these provisions allows a firm to exclude part of income in excess of 10% of tangible assets, with tangible assets depreciated using the alternative depreciation system. Thus for a domestic project eligible for FDII (i.e. that sells to foreign purchasers), the EATR becomes

$$EATR = \left(\frac{\rho}{p}\right)METR + \left(\frac{0.1\mathbb{1}_{tan}-\rho}{p}\right)T + \left(\frac{p-0.1\mathbb{1}_{tan}}{p}\right)T(1-\theta_{FDII})$$

In this expression, $\mathbb{1}_{tan}$ is an indicator for whether the relevant asset is depreciable (equipment or structures) and θ_{FDII} is the exclusion rate for FDII (37.5% under current policy, and 21.875% beginning in 2026).

For a foreign project, GILTI is assessed on 50% of income in excess of 10% of tangible assets, with a credit for 80% of foreign taxes. Thus under a 21% statutory US corporate tax rate, a firm has tax liability under GILTI if and only if the foreign tax rate is under 13.125%. Thus the EATR is as follows.

$$EATR = \left(\frac{\rho_f}{p}\right)METR_f + \left(\frac{p-\rho_f}{p}\right)\tau_f + \left(\frac{p-0.1\mathbb{1}_{tan}}{p}\right)\max\left\{T(1-\theta_{GILTI})-0.8\tau_f, 0\right\}$$

In these equations, ρ_f and $METR_f$ refer to the cost of capital and METR in the foreign country, computed using full interest deductibility, the alternative depreciation system and the foreign tax rate.

State and Local Taxes

When measuring the full burden of capital taxes, it is important to include the burdens from state and local taxes. These generally take three forms: taxes on business income, taxes on investment income, and property taxes.

For C corporations, state and local taxes are fully deductible. Accordingly, the tax rate used for C corporations is

$$\tau = \tau_f + \tau_s(1-\tau_f\tau_f)$$

where τ_f is the federal tax rate, τ_s is the state and local tax rate, and the interaction terms adjusts for deductibility of state and local taxes.

For purposes of state and local corporate taxes, only top tax rates matter, and it is difficult to adjust for decisions by corporations to headquarter in lower-tax jurisdictions. We also lack sufficient data to estimate this properly. Given these challenges, we use a conservative rate of 5%, although most states have top statutory corporate tax rates higher than this (Cammenga 2020).[1]

For state and local taxes on pass-through business income, these taxes are levied at the level of the owner's business income. Consequently, limits on the deductibility of state and local taxes, in particular the $10,000 SALT cap, raise the impact of state and local taxes on pass-through business tax rates. The tax rate used for pass-through businesses is

$$\tau = \tau_f + \tau_s(1-\tilde{\tau}_s)$$

where $\tilde{\tau}_s$ is the weighted average marginal subsidy on state and local taxes paid, estimated using Tax-Calculator. Under current law, this subsidy is approximately 0.8%, although with the expiration of the individual income tax provisions it would rise to 13.6%. Tax rates on interest income, dividends, and short-term and long-term capital gains are similarly adjusted. To obtain estimates of the state and local marginal tax rates, we use estimates from Feenberg & Coutts (1993), which compute these state tax rates up through

[1] Cammenga, Janelle. "State Corporate Income Tax Rates and Brackets for 2020." Tax Foundation, January 2020, https://taxfoundation.org/state-corporate-income-tax-rates-brackets-2020/.

2008. The average rates have remained stable over their sample period, so we use the most recent estimates only.[2]

Finally, we need to augment the relevant equations to allow for property taxes. This is fairly simple, as the cost of capital equation becomes

$$\rho = \frac{1 - Z - F}{1 - T}(r - \pi + \delta) - \delta + \tau_p(1 - T)$$

where τ_p is the property tax rate. State and local property taxes paid are fully deductible from business income. To estimate the property tax rate, we divide total state and local property tax revenue ($526 billion in 2017[3]) by total tangible fixed assets in 2017 ($42,093.4 in 2017, from BEA fixed asset data), which gives a 1.25% property tax rate on tangible property. We assume a zero property tax rate on intangible property, as it is generally not subject to property taxes and is difficult to value when computing property tax liability.

Data

We separately compute costs of capital and METRs by fixed asset type (92 asset types), by industry (62 industries) and by firm type (C corporation, S corporation, sole proprietorship and partnership). We allow the tax rates used to vary by firm type, with the rate for C corporations as specified by relevant law, and the tax rates for sole proprietorships, partnerships and S corporations computed using the open-source Tax-Calculator microsimulation model for the individual income and payroll taxes.

To compute weighted averages, we use a breakdown of net stocks of fixed assets by asset type, by industry and by firm type. These are computed using the BEA detailed fixed asset tables, which provide net stocks and investment in fixed assets by asset type and industry. We combine this with BEA data on fixed assets by legal form of organization to split these between corporations, sole proprietorships and partnerships. We use the IRS SOI Tax Stats on returns of active corporations to split corporate assets into those of S corporations and those of C corporations.

[2] Feenberg, Daniel and Elizabeth Coutts. "An Introduction to the Taxsim Model." *Journal of Policy Analysis and Management* 12 (1), Winter 1993.

[3] https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/projects/state-and-local-backgrounders/property-taxes