

CBO

Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options



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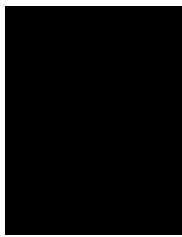
Note

Sums of numbers in the text and tables may not equal totals because of rounding.



Contents

Summary	1
How Do Effective Tax Rates Differ Among Investments?	1
How Would Various Policy Options Change Effective Tax Rates?	3
The Taxation of Capital Income	4
Income of C Corporations	4
Income of Other Types of Business Entities	5
Income From Owner-Occupied Housing	5
Capital Income of Individual Investors	6
Measuring Effective Tax Rates on Capital Income	6
Estimating ETRs and Their Dispersion	7
Uses and Limitations of the ETR Framework	7
Simplifications of the Analysis	8
Effective Tax Rates Under Current Law	9
Business ETRs by Form of Organization and Source of Financing	9
Variation Among Business ETRs, by Asset Type	11
Variation Among Business ETRs, by Industry	13
ETRs on Owner-Occupied Housing	13
Policy Options for the Taxation of Capital Income	14
CBO's Approach to Evaluating the Options	15
Options That Would Reduce the Tax on Capital Income	16
Options That Would Reduce or Eliminate Tax Preferences for Capital Income	19
Options That Would Narrow Specific Disparities Among Tax Rates Without Changing the Overall ETR	23
Appendix A: CBO's Methodology for Estimating Effective Tax Rates	27
Appendix B: The Sensitivity of Estimates of Effective Tax Rates to Certain Analytical Choices	37
Appendix C: Changes in CBO's Estimates of Effective Tax Rates Since 2005	45
List of Tables and Figures	48
About This Document	49



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Summary

The federal tax treatment of capital income affects investment incentives, both for the amounts invested and for allocations among assets. When tax rates are high, investors require higher before-tax rates of return and thus forgo investments with lower returns that they otherwise would have made. Current law produces significant variations in the taxation of capital income from different investments, thus leading investors to require higher before-tax rates of return on some investments than on others. Those differences reduce economic efficiency—the extent to which resources are allocated to maximize before-tax value.

An effective marginal tax rate (hereafter referred to as an effective tax rate or ETR) measures an investor's tax burden on returns from an investment. An ETR combines a statutory tax rate with other features of the tax code (various deductions and credits, for example) into a single percentage that applies to before-tax capital income realized over an investment's lifetime. (In this report, capital income consists of receipts minus the cost of goods sold, operating expenses, interest paid, and an allowance equal to the decline in value of capital assets because of economic depreciation—that is, wear and tear or obsolescence.) The higher the ETR, the greater the distortion in investments, holding all else equal; thus, the greater the variation (or nonuniformity) of ETRs among different investments, the less likely it is that resources will be used efficiently.

For this report, the Congressional Budget Office (CBO) estimated ETRs on income from marginal investments (those expected to earn just enough, after taxes, to attract investors) in such tangible capital assets as equipment, structures, land, and inventories (assets held for resale). In considering both corporate and individual taxation—but only with respect to the permanent features of federal

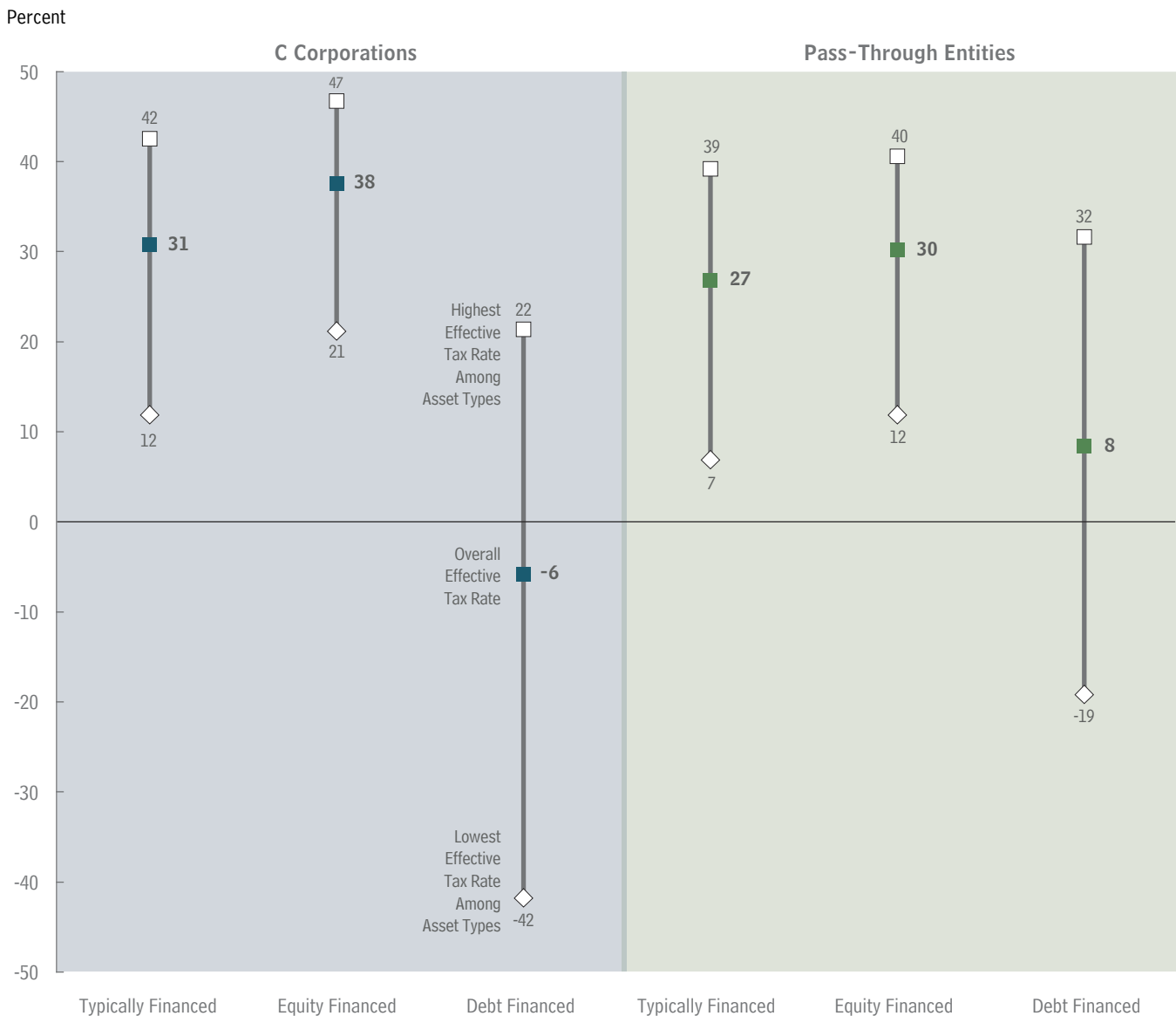
income tax law in 2014—CBO arrived at the following conclusions:

- The ETR on capital income is, on average, 18 percent;
- The ETR on income from owner-occupied housing is close to zero; and
- The ETR on capital income generated by businesses is, on average, 29 percent.

How Do Effective Tax Rates Differ Among Investments?

Federal tax law distinguishes among different forms of capital income, and ETRs vary significantly as a result. For example, rent paid to a property owner is subject to income taxes, but the income “generated” by owner-occupied housing is not. (Calculations of personal income for the national income accounts and for the analysis in this report count, as income to a homeowner, the amount a tenant would pay in rent for that home, even though no cash transaction occurs.) The profits of some types of business (called pass-through entities because their profits are “passed through” to their owners) are taxed only under the individual income tax, whereas the profits of others (called C corporations for a section of the tax code) are taxed under the corporate income tax and, to some extent, under the individual income tax. Tax law also distinguishes between income from debt- and equity-financed investments.

Those and other factors create a wide range of ETRs among investments. Furthermore, the estimated ETRs presented in this report by form of organization and source of financing are, for the most part, averages that mask considerable variation among industries and asset types (and even those presented for specific industries mask variation by asset type, and those presented for specific asset types mask variation by industry).

Figure 1.**Range of Effective Tax Rates by Form of Organization and Source of Financing**

Source: Congressional Budget Office.

Note: Typical (average) financing for C corporations between 1999 and 2008 (a period encompassing two high-to-low cycles in equity values) was 68 percent equity and 32 percent debt; for pass-through entities between those same years, it was 71 percent equity and 29 percent debt.

Rates by Form of Organization and Source of Financing.

C corporations face an ETR on income from debt-financed investments of -6 percent, which represents a subsidy (see Figure 1). By contrast, C corporations face an ETR of 38 percent on equity-financed investments. The range of ETRs faced by pass-through entities is not quite as large: The ETR is 8 percent on debt-financed investments and 30 percent on equity-financed investments.

Rates by Asset Type.

The significant variation seen in ETRs for various asset types arises from differences between the rates at which the tax code allows businesses to deduct the cost of assets (known as tax depreciation) and the rates at which those assets actually wear out or become obsolete (economic depreciation). The greater the acceleration in tax depreciation relative to economic depreciation, the lower the ETR. The top statutory tax rate for C corporations is 35 percent, but because of the

Table 1.**Summary of Effects of Policy Options for Taxing Capital Income**

	Change in Overall Effective Tax Rate on Capital Income (Percentage points)	Increases Uniformity Among Some Investments ^a	Reduces Uniformity Among Some Investments ^a
Reduce the Tax on Capital Income			
Option 1: Reduce the Top Corporate Income Tax Rate to 25 Percent	-3	Yes	No
Option 2: Eliminate Individual-Level Taxes on Dividends and on Capital Gains From the Sale of C Corporation Stock	-2	Yes	No
Option 3: Allow Immediate Expensing of Capital Acquisitions	-20	Yes	Yes
Reduce or Eliminate Tax Preferences for Capital Income			
Option 4: Tax as Ordinary Income All Dividends and Long-Term Capital Gains From the Sale of C Corporation Stock	2	No	Yes
Option 5: Disallow New Contributions to Tax-Favored Retirement Plans	5	Yes	Yes
Option 6: Conform Tax Depreciation to Economic Depreciation	3	Yes	Yes
Narrow Specific Disparities Among Tax Rates Without Changing the Overall Effective Tax Rate			
Option 7: Eliminate Itemized Deductions for Mortgage Interest and Property Taxes and Reduce Individual Tax Rates	No change	Yes	Yes
Option 8: Limit Allowable Deductions for Business Interest and Reduce Corporate and Individual Tax Rates	No change	Yes	No

Source: Congressional Budget Office.

a. "Yes" indicates an increase or reduction of at least 10 percent in at least one measure of uniformity.

depreciation rules, ETRs range from 12 percent (for railroad track) to 42 percent (for nuclear fuel). Pass-through entities' ETRs are generally lower, although the range is similar. (In this report, ETRs for any given asset type are estimated to be independent of the mix of industries that invest in that asset.)

Rates by Industry. Variations in ETRs by industry arise mainly because of differences in eligibility for and use of the deduction for domestic production activities and in industry-specific rules for depreciation. Among industries, C corporations' ETRs range from 30 percent to 33 percent—a much smaller range than among asset types. For pass-through entities the range in ETRs among industries is negligible. (ETRs for any given industry are estimated to be independent of the mix of assets used in that industry.)

How Would Various Policy Options Change Effective Tax Rates?

CBO examined three sets of policy options for changing the taxation of capital income. The options in the first group would lower the overall ETR on capital income; those in the second group would eliminate the current

favorable tax treatment for certain types of capital income and raise the overall ETR on capital income; and those in the third group would narrow the disparities between the tax rates for various investments while leaving the overall ETR unchanged. CBO's analysis does not account for changes in taxpayers' behavior in response to those options.

Reduce the Tax on Capital Income. CBO analyzed three options in this category. Option 1, to reduce the top corporate tax rate from 35 percent to 25 percent, would lower the ETR on capital income by 3 percentage points—from 18 percent to 15 percent (see Table 1). Option 2, to exempt dividends and capital gains from the individual income tax, would reduce the ETR by 2 percentage points. Both would promote uniformity in the taxation of capital income, but the first would do more than the second. Option 3, to allow businesses to deduct the entire cost of capital acquisitions in the year of purchase, would reduce the overall ETR approximately to zero, providing greater uniformity among asset types and industries. But it also would generate large negative ETRs on income from debt-financed investment, which would reduce uniformity between sources of financing.

Reduce or Eliminate Tax Preferences for Capital Income.

All three options in this category would reduce uniformity in taxation. Option 4, to tax dividends and capital gains at the rates that apply to wages, interest, and the profits of pass-through entities, would boost the ETR by 2 percentage points; it would not significantly promote uniformity of taxation among capital investments in any way. Option 5, to disallow new contributions to tax-favored retirement plans, would raise the ETR on capital income by 5 percentage points and increase uniformity by, for example, reducing the difference between the ETRs on income from debt- and equity-financed investments, but it would reduce uniformity by widening the difference between ETRs faced by C corporations and pass-through entities on income from equity-financed investments. Option 6, to require that depreciation deductions match economic depreciation, would increase the ETR by 3 percentage points and promote tax rate uniformity among asset types and industries.

Narrow Specific Disparities Among Tax Rates Without Changing the Overall ETR.

The final pair of options would lessen disparities in taxation by other means. Option 7, to end deductions for mortgage interest and property taxes (but provide an offset through a reduction in individual income tax rates), would reduce the differences between the ETRs for owner-occupied housing and business investment. However, it also would widen the difference between the ETRs on debt- and equity-financed investments by C corporations and in owner-occupied housing. Option 8, to limit deductions for business interest (with offsetting cuts in other tax rates), would narrow the differences in ETRs for debt and equity financing for C corporations and pass-through entities.

The Taxation of Capital Income

The rates at which the federal government currently taxes capital income depend on the circumstances of the producer (for example, a business purchasing a tangible asset or an individual building a new home) and of the investor (the entity that purchases the financial instrument—for example, stocks or bonds—that supports a producer's purchase of an asset). The profits of C corporations (which are taxed under subchapter C of the Internal Revenue Code) are subject to an entity level, or corporate, tax. Those profits are taxed again to some extent, as dividends or capital gains, under the individual income tax. The profits of other types of businesses—sole proprietorships and partnerships, for example—are not taxed at the entity level but are deemed to be passed through to their owners immediately and therefore are

subject to the individual income tax. The tax rates on housing differ depending on whether a property is the owner's residence or an investment property that is rented to a tenant. Similarly, the taxation of the capital income of individual investors depends on the source—specifically, whether the income represents interest, a dividend, or a capital gain from the sale of stock—and on the type of savings account or financial instrument in which it occurs.

Income of C Corporations

C corporations pay taxes on receipts net of expenses (such as the cost of raw materials purchased and the cost of employee compensation) incurred in the production of goods or services. Although graduated rates apply below a certain income threshold, the top federal statutory corporate tax rate of 35 percent applies to most taxable corporate profits.¹

One type of expense that a business can deduct from its profits is depreciation, which compensates for the loss in value of a productive asset resulting from wear and tear or obsolescence.² Under current law, depreciation deductions rarely match the actual decline in value, and thus the effective rate of taxation deviates from the statutory rate: When the rate of tax depreciation is faster (or slower) than the rate of economic depreciation, the

1. Under current law, surtaxes are imposed on some ranges of corporate income, resulting in rates above the top statutory rate of 35 percent. Specifically, a total rate of 39 percent applies to taxable income between \$100,000 and \$335,000, and a total rate of 38 percent applies to taxable income between \$15,000,000 and \$18,333,333. Corporations pay taxes on net income in excess of \$18,333,333 at a rate of 35 percent. The surtaxes effectively phase out the benefit of lower rates applied to income below those thresholds. Overall, the marginal tax rate on the income of profitable C corporations in 2010 was, on average, 34.7 percent.
2. Since 1958, businesses that acquire relatively small amounts of new or used assets in a year have been able to immediately deduct, or expense, some of the cost under Section 179 of the Internal Revenue Code. The asset and deduction thresholds increased over time until 2012 and 2013, when businesses acquiring less than \$2 million in assets could expense up to \$500,000. Between 2001 and 2013, various tax laws occasionally permitted businesses of all sizes to expense a certain percentage of their asset acquisition costs (50 percent in 2013) in addition to any deductions under Section 179. Beginning in 2014, however, expensing is limited to businesses that acquire less than \$200,000 of assets; the deduction will be limited to \$25,000 (with adjustments for inflation in later years). As this report was going into production, the Congress had cleared the Tax Increase Prevention Act of 2014 (H.R. 5771), which would extend the higher thresholds and 50-percent expensing retroactively to 2014, but the President had not yet signed the bill.

effective marginal tax rate is lower (or higher) than that implied by the statutory tax rate alone. Tax depreciation outpaces economic depreciation for most types of equipment, but it is slightly slower than economic depreciation for most types of nonresidential buildings.³

Corporations can obtain financing for investments in two ways—each with implications for tax liability—that can be illustrated by comparing two companies that operate in a competitive environment that limits their returns to the minimum required to induce their investment. The first company finances a capital acquisition through debt—by issuing a bond or borrowing from a bank—and deducts the interest paid on the debt. That deduction would offset any taxable profits and hence eliminate any corporate tax liability on the investment. In contrast, the second company finances a capital acquisition through equity—by issuing new stock or reinvesting after-tax profits—but cannot claim an analogous deduction. The absence of the deduction for the imputed cost of raising equity would generate taxable profits and create a corporate tax liability.

After being taxed at the entity level, the profits of C corporations are taxed a second time at the level of the shareholder. Corporations can distribute profits as dividends to shareholders—thus tending to reduce the value of the corporation's stock—or retain after-tax profits for future investment. Shareholders pay individual income tax on corporate dividends or the capital gains they realize when they sell their shares. Like the dividends paid to shareholders, interest payments to bondholders are taxable at the individual level, although that does not constitute a second level of taxation. Because interest payments are deductible from corporate taxes, the individual-level tax represents the only tax burden on debt-financed investment of C corporations.

Income of Other Types of Business Entities

Businesses other than C corporations calculate net business income (including depreciation deductions) similarly, but the income is taxed differently: All of it, including income that is retained for reinvestment, is passed through to the owners and added to their taxable income. Thus, all profits are taxed only at the individual level. The top statutory tax rate under the individual income

tax, at 39.6 percent, is higher than the top corporate rate, but profits from pass-through entities are taxed, on average, at a lower marginal rate (the percentage of an additional dollar of income that is paid in taxes) because of the graduated structure of the individual income tax. Pass-through entities can be S corporations (taxed under subchapter S of the Internal Revenue Code) or unincorporated businesses, such as sole proprietorships and partnerships.⁴

Income From Owner-Occupied Housing

Like businesses, owners of housing receive a return on their investment. That return is obvious when the investment is in a dwelling that is leased to tenants. The owner (or lessor) receives rent from the tenant (or lessee), and that rent, minus expenses, is included in the lessor's income. Someone who purchases a house as a primary residence receives the same housing benefits that a lessee of the property would, and that property owner also—implicitly—receives the same rent that would be paid to a lessor, even though no money changes hands. According to that construct, a homeowner's income effectively is increased by the value of the shelter that he or she receives from the investment in housing.⁵

Whether a property owner lives in a dwelling or rents it to someone else, he or she is a producer whose investment choices are influenced by the tax treatment of the income—in cash or imputed—that is derived from that housing. However, the tax treatment of the income from owner-occupied housing differs from the treatment of income from a rental property or from another type of business. Lessors include rents in their taxable income, and they are permitted to take tax deductions for such expenses as depreciation, mortgage interest, and property taxes. The taxation of capital gains from the sale of rental property is similar to that for most other types of assets, although the tax code provides certain advantages to the owners of rental housing that are not available to other

3. Jane G. Gravelle, "Reducing Depreciation Allowances to Finance a Lower Corporate Tax Rate," *National Tax Journal*, vol. 64, no. 4 (December 2011), pp. 1039–1054, <http://tinyurl.com/mtapna3>.

4. A C corporation can participate in a partnership, but for the purposes of this report, the portion of partnership income that is attributable to C corporations is treated as being subject to the corporate income tax.

5. Although consumer durable goods, such as automobiles and household appliances purchased for personal use, constitute another category of tangible assets that are purchased without the intention of producing something for sale, they have accounted for less than 10 percent of tangible assets since 2004 and were not considered in this report.

investors.⁶ Owner-occupants, in contrast, exclude their implicit gross receipts (that is, the home's rental value) from taxable income. They can deduct mortgage interest and property tax payments (although not depreciation) if they itemize deductions. And, in most cases, they can exclude a portion of their capital gains from the sale of a primary residence—currently up to \$500,000 for married couples filing a joint tax return and up to \$250,000 for most other filers.

Capital Income of Individual Investors

Individual investors receive capital income—which generally, but not always, is subject to the individual income tax—in the form of interest, dividends, or capital gains. Most dividends and capital gains are subject to a maximum tax rate of 23.8 percent; other types of taxable income, including interest, can be taxed at rates up to 43.4 percent.⁷ The deferral of the tax on capital gains until after the sale of an asset provides an additional benefit, and if an asset is held until its owner dies, the accrued capital gains are not taxed at all under the individual income tax. Finally, investors can reduce or eliminate tax liability on all types of capital income by investing that income in certain types of savings accounts or other financial instruments—often for retirement but also for education or health care. Tax relief is provided primarily through three mechanisms:

- *Up-front deductions and exclusions:* All contributions by employers to retirement plans, most contributions by employees to employer-sponsored retirement plans,

and about half of all contributions to individual retirement accounts (IRAs) are excluded from taxable income. Income accruing within those plans is not taxed, but taxes must be paid when funds are withdrawn.

- *Tax-free withdrawals:* Income accruing within Roth-style retirement plans, whether in employer-sponsored plans or IRAs (approximately half of all IRA contributions), is not taxed either when it accrues or when the funds are withdrawn. However, contributions to those plans are not excluded from taxable income.
- *Temporary deferrals:* Income accruing within annuities and some types of life insurance (whole-, universal-, and variant-life policies) is not immediately taxed, although taxes are due upon withdrawal of amounts that are greater than the original investment. Like Roth-style plans, purchases of such instruments are not excluded from taxable income.

Measuring Effective Tax Rates on Capital Income

Effective marginal tax rates are commonly used as a measure of how much a tax system distorts investment decisions. The ETR is a single rate that accounts for the effects of statutory tax rates and other features of the tax code (such as depreciation deductions) on after-tax rates of return over the lifetime of an investment. In this report, CBO's estimates of ETRs are forward looking and focus on the marginal (or "break even") investment in tangible assets—each calculation is based on a prospective investment that is expected to earn just enough to yield the after-tax market rate of return (roughly the equivalent of the returns on an index fund of corporate bonds or equities, depending on the source of financing).⁸

Various features of tax law result in widely disparate ETRs, depending on the nature of the investment. Almost every combination of asset type, industry, form of organization, and source of financing yields a different

6. For details on the taxation of rental housing, see Larry Ozanne, *Taxation of Owner-Occupied and Rental Housing*, Working Paper 2012-14 (Congressional Budget Office, November 2012), pp. 6–8, www.cbo.gov/publication/43691.

7. The 23.8 percent rate is the sum of the 20.0 percent top rate for individual income taxes on dividends or capital gains and the 3.8 percent tax on higher-income taxpayers' unearned income. (The unearned income tax took effect in 2013 as a result of the Affordable Care Act, which, for the purposes of this report, comprises the Patient Protection and Affordable Care Act and the health care provisions of the Health Care and Education Reconciliation Act of 2010, as affected by subsequent judicial decisions, statutory changes, and administrative actions.) Certain dividends and capital gains are taxable at rates up to 43.4 percent (the top ordinary income tax rate of 39.6 percent plus 3.8 percent) if the associated stock has been held for a less than a specified period. Various phaseouts can raise the effective individual tax rate above the statutory rate. For example, the phaseout of itemized deductions can add 1.2 percentage points to the top marginal tax rate.

8. This report follows a conventional approach to constructing ETRs but differs in the treatment of incentives for saving (specifically, by simulating variations in the use of such incentives according to the source of financing and the form of business organization). Public and nonprofit investments in tangible assets are not considered, nor are those of consumers, except for housing.

ETR. The rates presented in this report, however, represent estimated averages for aggregated categories. In general, higher ETRs tend to depress investment overall, and the more variation there is in ETRs among different investment types, the more is capital misallocated to less productive uses.

ETRs constitute just one tool for analyzing one facet of the tax system, however. They are not useful in the reappraisal of past investments, for example, and they have limitations, described below, even for use in prospective analyses. CBO's framework for analyzing ETRs involved simplifications that rendered its results only approximate.

Estimating ETRs and Their Dispersion

Because of the different ways that capital income is taxed, CBO estimated ETRs on the basis of various types of investments' characteristics, as follows:

- Source of financing (equity or debt),
- Type of asset (55 types),
- Industry in which an asset is deployed (54 industries),
- Form of organization (C corporation or pass-through entity), and
- Housing tenure (owner or tenant occupied).

CBO computed ETRs for every combination of elements in those categories. It also calculated ETRs for each aggregate category (for example, all equity-financed investment, and all investment by C corporations) and for capital income generally using weighted-average values of the various components. (Appendix A describes CBO's methodology.) The weights were based on the distribution of assets in the economy in 2007.

The weighting method was designed to isolate the tax differences among types of assets and industries. For example, some types of assets that are used almost exclusively by the mining industry have below-average ETRs. However, in its calculation of an aggregate ETR for the mining industry, CBO weighted the ETR for each asset type on the basis of its representation in the distribution of asset types among all industries, rather than in the distribution for the mining industry alone. That way, differences among industries would reflect only the

differences in the way the tax code treats each industry rather than in the way those industries deploy particular kinds of assets.

CBO used two types of measures of uniformity of ETRs: One compares two categories and the other compares several. In its calculations related to sources of financing, CBO measured uniformity as the difference between the ETRs on equity-financed and debt-financed investments. Similarly, differences were calculated between the ETRs for C corporations and pass-through entities and between those for owner-occupied and rental housing. However, because there are more than two categories of asset types and industries, CBO measured uniformity among those categories by calculating the mean difference, which is comparable to the simple differences between sources of financing and forms of organization. The mean difference is the average difference between the ETRs of every pair of categories (that is, industry or asset type), with each pair weighted by the relative size of the paired categories.⁹ For all measures of uniformity, a score of zero indicates complete uniformity; greater absolute values (that is, values that are farther from zero in either direction) signal less uniformity. Thus, differences between the ETRs for debt and equity financing of either 20 or -20 percentage points would indicate less uniformity than would a difference of 10 percentage points.

Uses and Limitations of the ETR Framework

Effective tax rates are most useful as a consolidated indicator of the various tax factors facing investors who might be weighing new marginal investments. ETRs' level and uniformity are two measures of the tax treatment of capital income that can be useful in analyses of the tax system's efficiency.

ETRs do not offer a useful tool for evaluating the tax burden on existing investments, however. Analysis of marginal investments in the near future does not correspond to the way actual investments have unfolded in the

9. For example, if three equally weighted ETRs were 27 percent, 30 percent, and 33 percent, their mean difference would be 4; that is $[(30 - 27) + (33 - 30) + (33 - 27)]/3$. This measure is independent of the ranking of asset types or industries, and it operates for different policy options more predictably than other measures, such as the interquartile range (that is, the difference between the ETRs at the 25th and 75th percentiles) for which the rank order is critical.

past. For example, reported dividends and capital gains affect the tax burden on existing investments, but they reflect actual rates of return on those investments, not the rate of return used in the ETR framework. Because the ETR framework uses a fixed, break-even rate of return, it will not, even over time, account for capital losses or for the considerable capital gains and dividends that reflect returns in excess of that rate.

Also, because ETRs are marginal, rather than average, rates, they cannot be used to estimate actual amounts of, or changes in, tax liability. Nevertheless, a tax system with a higher ETR is likely to raise more revenue than one with a low ETR.

Simplifications of the Analysis

To streamline the analytical process, CBO simplified its estimation of ETRs in several ways: It did not account for the effects of ETRs on taxpayers' behavior, excluded certain types of assets from calculations, ignored international capital flows, and omitted some other factors that affect capital income.

CBO did not estimate the magnitude of ETRs' effects—particularly with regard to uniformity among rates—on taxpayers' saving and spending behavior. For example, if a policy increased the ETR only on income from owner-occupied housing, future investment could be expected to shift away from owner-occupied housing toward business assets. Each policy option in this report provides incentives for taxpayers to change their investment patterns in predictable directions. Economists differ, however, in their opinions of the degree to which taxpayers would respond to those incentives.

Intangible assets—advertising-based brand allegiance, for example, or company-specific knowledge, techniques, and innovations—were excluded from CBO's analysis, and the resulting ETRs are higher than they would be if such assets (most of which effectively are not taxed because investments in them can be expensed immediately) were included. However, only one policy option in this report involves a change from the way intangible assets are treated under current law; including intangible assets would have had virtually no influence on CBO's estimates of the other options' effects. Because of data limitations, the analysis also excluded livestock and such natural resources as timber and oil, gas, and hard-mineral reserves. Had they been included, all such assets would

probably lower the overall ETR because of their favorable tax treatment.¹⁰

To simplify, all producers and investors are analyzed in the ETR framework as though they are subject to the U.S. income tax. Thus, that framework ignores both the investments of foreigners that fund asset purchases in the United States and the purchases of assets by U.S. companies and residents outside of the United States. Because foreign investors are not subject to the U.S. individual income tax, there is no reason to account for income that they earn from U.S. investments because it has no bearing on the ETRs for capital income in the United States.¹¹ Any consideration of investments outside of the United States in this report would have required accounting for foreign tax laws, a subject that is beyond the scope of the study. The ETR framework still provides useful insights, however, because the U.S. economy is so large that most funds invested domestically originate with U.S. residents, and the resulting interest, dividends, and capital gains would be subject to the individual income tax. The growing globalization of businesses and capital flows, however, will make that approximation of equality between domestic investment and domestic savings less accurate in the future.¹²

CBO made other simplifications in the analysis, such as omitting estate and gift taxes and self-employment contributions to Social Security. (Appendix B discusses the sensitivity of the results to the inclusion of self-employment taxes.) Although to the extent possible the data are disaggregated by type of asset and industry, the tax code contains provisions that affect the taxation of capital income from different subsets of those categories;

10. For example, certain oil and gas extraction benefits from "percentage depletion." Depletion of a natural resource is analogous to the wearing out of machinery, and the percentage depletion deduction is equal to a fixed percentage of gross income. Over time, such a deduction can exceed the resource's original value.

11. The reaction of foreign investors to tax changes in the U.S. could, however, indirectly affect ETRs by influencing interest rates or the allocation of investments among asset types and industries.

12. For an analysis of the international implications of corporate income taxation and ETRs, see Congressional Budget Office, *Options for Taxing U.S. Multinational Corporations* (January 2013), www.cbo.gov/publication/43764; and *Corporate Income Tax Rates: International Comparisons* (November 2005), www.cbo.gov/publication/17501.

this analysis omits most such features.¹³ This analysis did not incorporate the effects of any relationship between effective tax rates and compliance with tax law.¹⁴ As a way to focus on the effects of federal tax options, the analysis generally excluded state and local taxes, although it accounts for their deductibility from the federal income tax.

Effective Tax Rates Under Current Law

CBO estimated ETRs using permanent features of tax law that were in effect in 2014, including two relatively recent provisions (Appendix C provides an estimate of those provisions' effects on overall ETRs):¹⁵

- The 3.8 percent tax on the unearned income (including interest, dividends, and capital gains) of taxpayers whose income is above \$200,000 (\$250,000 for married couples filing joint returns) that took effect in 2013 under the Affordable Care Act, and
- The provisions of the American Taxpayer Relief Act of 2012 (ATRA) that affect higher-income taxpayers.¹⁶

The calculations did not account for the provision of ATRA that permitted an immediate deduction for half of the cost of new equipment; that provision expired at the end of 2013 and thus was not relevant to decisions about

new investments thereafter.¹⁷ Other recently expired or expiring provisions have minimal impact on capital income that accrues from investments in tangible assets.¹⁸

By CBO's estimates, the overall ETR on capital income under current law is 18 percent (see Table 2). That rate, however, is strongly influenced by an ETR of close to zero on income from owner-occupied housing, which is explicitly excluded from taxable income. For capital income generated by businesses, the overall ETR is 29 percent. ETRs within the business sector vary significantly depending on the form of business organization, the source of financing, the type of asset, and the industry.

Business ETRs by Form of Organization and Source of Financing

In general, according to CBO's analysis, C corporations face a higher ETR than pass-through entities do for equity-financed investment. For debt-financed investment, the opposite is true: The ETR faced by pass-through entities is higher. And regardless of the form of organization, the ETR on income from equity-financed investment is substantially higher than that for debt-financed investment.

13. For an example of ETRs calculated for subsets of the utility, mining, and pipeline transportation industries, see Gilbert E. Metcalf, "Investment in Energy Infrastructure and the Tax Code," in Jeffrey R. Brown, ed., *Tax Policy and the Economy, Volume 24* (National Bureau of Economic Research, 2010), pp. 1–33, <http://papers.nber.org/books/brow09-1>.

14. According to the Internal Revenue Service's most recent compliance estimates, the gross tax gap—the difference between true liability and the amount of taxes paid on time—was \$450 billion in 2006 (17 percent of tax liability). Late payments and enforcement actions reduced the gap to \$385 billion (14 percent of tax liability). Of the gross amount, \$122 billion was the result of underreporting of income by pass-through entities and \$67 billion was the result of underreporting of income by C corporations. Most of the remainder was not attributable to business activity. See Internal Revenue Service, "Tax Gap for Tax Year 2006: Overview" (January 6, 2012), <http://go.usa.gov/APJP> (PDF, 199 KB).

15. The data underlying the calculations are for 2007. More recent data are available, but they reflect the recession and the ensuing financial crisis. CBO deemed prerecession data to be more relevant to decisions that taxpayers would make about investments in the future. (Appendix B presents results using 2009 data.)

16. Specifically, those provisions include the top rate of 39.6 percent on ordinary income (income included in the tax base, other than capital gains and certain dividends), the top rate of 20 percent on dividends and capital gains for taxpayers whose income is above \$400,000 (\$450,000 for married couples filing joint returns), the phasing out of the personal exemption and certain itemized deductions for taxpayers whose income is above \$250,000 (\$300,000 for married couples filing joint returns), and the indexing of the alternative minimum tax for inflation. For details of the American Taxpayer Relief Act, see Joint Committee on Taxation, *General Explanation of Tax Legislation Enacted in the 112th Congress*, JCS-2-13 (February 2013), Part 12, <http://go.usa.gov/N5Kd>.

17. As this report was going into production, the Congress had cleared the Tax Increase Prevention Act of 2014 (H.R. 5771), which would extend the immediate deduction retroactively to 2014, but the President had not yet signed the bill. Investors might consider the likelihood of further extensions in making investment decisions, but CBO did not attempt to estimate such a probability. Furthermore, the agency anticipates that nearly all new investment would be made in amounts too large to benefit from the permanent expensing allowance described in footnote 2.

18. Other major provisions in 2014 law that were excluded because they were temporary are the American Opportunity Tax Credit and the expansions of the earned income tax credit and the child tax credit.

Table 2.
Effective Tax Rates on Capital Income Under 2014 Law

	Percent
Overall	18
Business	29
C corporations	31
Equity financed	38
Debt financed	-6
Pass-through entities	27
Equity financed	30
Debt financed	8
Owner-Occupied Housing	-2
Equity financed	-3
Debt financed	1
Memorandum:	
Renter-Occupied Housing ^a	24

Source: Congressional Budget Office.

Note: Permanent features of 2014 law only; provisions that are scheduled to expire have been excluded.

- a. Income from renter-occupied housing is included in business income. About 90 percent of renter-occupied housing is owned by pass-through entities; 10 percent is owned by C corporations.

Although C corporations face higher rates overall than pass-through entities do, that difference masks another significant fact: There is a greater difference between the ETRs on equity- and debt-financed investment for C corporations than there is for pass-through entities. For C corporations, the gap in ETRs is 43 percentage points, while for pass-through entities, the gap is 22 percentage points (see Table 3).

C Corporations' Equity-Financed Investments. The ETR is 38 percent on profits from the equity-financed investments of C corporations, 3 percentage points above the top statutory tax rate of 35 percent. All such profits are subject to the corporate income tax (because C corporations cannot deduct dividend payments), and after-tax profits are subject to the individual income tax either on dividends or on capital gains. The ETR is reduced, however, by accelerated depreciation, the lower tax rates on dividends and capital gains, and the sheltering of income in retirement plans.

C Corporations' Debt-Financed Investments. The ETR is -6 percent on the income from debt-financed investments of C corporations. In the absence of inflation and accelerated depreciation, the effective corporate tax rate on such income would be zero, because interest payments are deductible. Inflation, however, enhances the value of the interest deduction, driving the ETR to negative values.¹⁹ Accelerated depreciation pushes the rate even further into negative territory. The individual tax rate on interest income, by contrast, is positive and would more than offset the negative corporate tax rate if people were not permitted to shelter income in retirement plans. Because almost one-third of interest income is sheltered, however, the overall ETR is slightly negative.²⁰

Pass-Through Entities' Equity-Financed Investments.

The ETR on income from equity-financed investments of pass-through entities is 30 percent—more than 7 percentage points lower than that for C corporations. The difference derives from the fact that the marginal tax rate on profits is, on average, lower under the individual income tax than under the corporate income tax. And unlike C corporations, pass-through entities face just one level of taxation.

Pass-Through Entities' Debt-Financed Investments. The ETR on income from debt-financed investments of pass-through entities is 8 percent—14 percentage points above that for C corporations. Some of the difference occurs because the typically lower marginal rate under the individual income tax moderates the effects of inflation on the value of the interest deduction. More important, however, only about 14 percent of the debt of pass-through entities (compared with 33 percent for C corporations) is held in tax-favored retirement plans; that difference probably arises because funds that hold commercial and multifamily residential mortgages (the largest

19. Inflation reduces the real (inflation-adjusted) cost of an interest payment, but it does not reduce the interest deduction itself. Thus, the value of the deduction is greater than the payment's real cost. In the absence of inflation, the interest deduction equals the payment's real cost; hence the conclusion that inflation enhances the value of the interest deduction.

20. CBO used data published for 2007 to estimate the shares of the debt of C corporations, pass-through entities, and homeowners that were held in tax-favored retirement plans. That year was chosen to be consistent with the data for asset values by industry, asset type, and form of organization. See Federal Reserve, *Flow of Funds Accounts of the United States* (March 8, 2012), www.federalreserve.gov/releases/z1/20120308/.

Table 3.
Measures of Uniformity in Effective Tax Rates Under 2014 Law

	Percentage Points
Difference Between Equity- and Debt-Financed Investments	
C Corporations	43
Pass-Through Entities	22
Owner-Occupied Housing	-4
Difference Between C Corporations and Pass-Through Entities	
Equity Financed	7
Debt Financed	-14
Mean Difference Between Asset Types^a	
C Corporations	7
Pass-Through Entities	6
Mean Difference Between Industries^a	
C Corporations	1
Pass-Through Entities	*
Compared With Owner-Occupied Housing	
Renter-Occupied Housing	26
All Business	31

Source: Congressional Budget Office.

Notes: Permanent features of 2014 law only; provisions that are scheduled to expire have been excluded.

* = between zero and 0.5 percentage points.

a. The mean difference is calculated by finding the differences between each pair of asset types or industries and weighting each pair by the relative value of the asset types or industries in that pair.

source of the debt of pass-through entities) are less commonly offered or selected as investment options in employment-based retirement plans than are funds that hold corporate bonds.

Variation Among Business ETRs, by Asset Type

ETRs among asset types vary because of differences in depreciation allowances, which affect rates to the extent that tax and economic depreciation differ. The tax code allows accelerated depreciation for most equipment and some structures; that is, a business can write off the cost of qualifying assets faster than those assets actually wear out. That circumstance would not lead to variations in ETRs if accelerated depreciation deviated from economic depreciation uniformly for every type of asset to which it

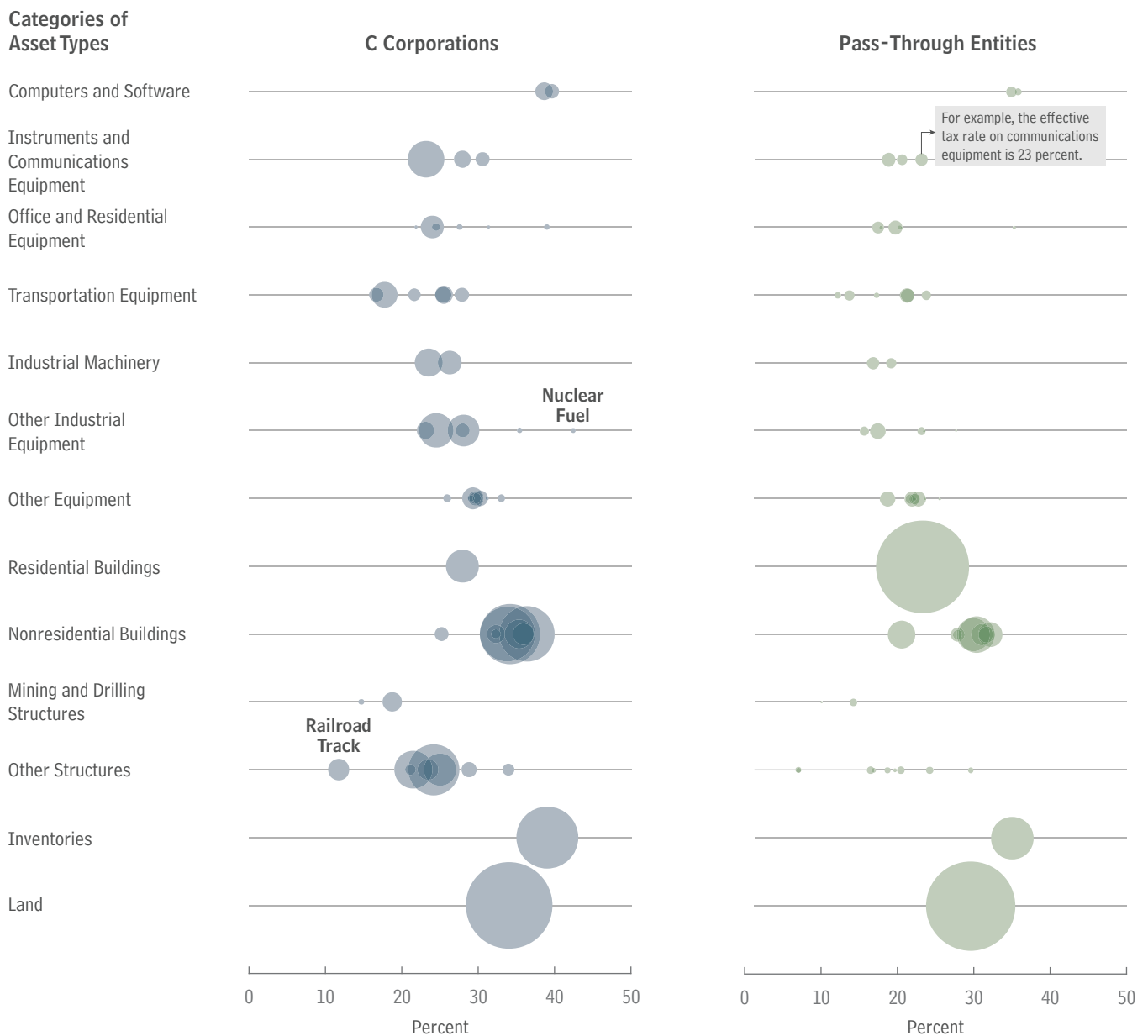
applies. However, the current cost-recovery system distributes most assets among nine classifications and assigns the same rate of depreciation to every asset within a classification—not enough variation to reflect the range of economic depreciation rates among asset types. That simplifying feature makes the deviations from economic depreciation nonuniform even among assets in the same classification, and thus it introduces variation among ETRs. The tax code also assigns special rules to certain asset types, sometimes providing for particularly favorable treatment, and thereby introducing even more variation.

Under current law there is a 30 percentage-point range in ETRs for C corporations by asset type—from 12 percent for replacement railroad track to 42 percent for nuclear fuel (see Figure 2).²¹ However, by CBO's estimates, the mean difference between the ETRs for each pair of asset types was only 7 percentage points. That outcome was heavily influenced by the fact that the ETRs of the five asset types with the largest aggregate values—land, inventories, commercial buildings, manufacturing buildings, and office buildings—were concentrated in a range from 34 percent to 39 percent. In contrast, ETRs for various types of transportation equipment ranged from 17 percent (railroad equipment) to 28 percent (automobiles); that dispersion had little consequence for the mean difference, however, because the combined value of transportation equipment was less than 10 percent that of the combined value of the five largest asset types.

Asset types with relatively high ETRs also included pre-packaged software (40 percent; in the category of computers and software), office and accounting equipment (39 percent; in the category of office and residential equipment), and computers and peripheral equipment (39 percent; in the category of computers and software). The rate of tax depreciation for most of those asset types is slower than the rate of economic depreciation. Asset types with relatively low ETRs (that is, those with the most accelerated rates of tax depreciation relative to economic depreciation) were, in addition to railroad track and equipment, mining structures (15 percent; in the category of mining and drilling structures), aircraft (18 percent; in the category of transportation equipment), and petroleum and natural gas structures (19 percent; in the category of mining and drilling structures).

21. ETRs by asset type are available in an online supplement to this report, www.cbo.gov/publication/49817.

Figure 2.
Effective Tax Rates, by Asset Type and Form of Organization



Source: Congressional Budget Office.

Note: Each bubble represents a particular type of asset within an asset category. The size of the bubble is proportional to the total value, in dollars, of that asset type in the economy. Bubbles are not shown for asset types with very small values.

For pass-through entities, the range between the highest and lowest ETRs was 32 percentage points. The asset types with the highest and lowest ETRs matched those of C corporations. The mean difference between the ETRs for each pair of assets, however, was about 6 percentage points—almost exactly the difference between the ETRs for residential buildings and land, which together

account for more than half of all assets of pass-through entities.²²

22. Calculated to the nearest tenth of a percentage point, the mean difference was 6.4 percent. The ETR for land was 29.6 percent and for residential buildings the ETR was 23.3 percent—a 6.3 percentage-point difference.

Variation Among Business ETRs, by Industry

The differences in various industries' ETRs are attributable to two aspects of the tax code. First, the code includes industry-specific exceptions to the general rules for depreciation. Electric utilities, for example, must depreciate transmission and distribution equipment at the same rate that they depreciate the structures that house the equipment; other industries are permitted to depreciate equipment separately from structures—and thus more rapidly. Telephone companies are permitted to depreciate their central office buildings more rapidly than are other types of businesses.

The second source of variation concerns the deduction for domestic production activities. As its name implies, that deduction is targeted toward activities, not toward specific industries or asset types. It is equal to 9 percent of net income derived in the United States from activities such as manufacturing, agriculture, and mining. Manufacturing industries derive approximately two-thirds of the benefit from that provision, although agriculture, mining, construction, electricity production, film production, and software development benefit as well.²³

If the tax code's treatment of different industries is the only factor considered—that is, if differences are disregarded concerning industries' use of heavily or lightly taxed assets—the variations in ETRs among industries are much smaller than are those among asset types. For C corporations, the mean difference between the industries' ETRs under current law is just under 1 percentage point, by CBO's calculations. The industries with the highest ETRs under current law fall into the utilities and transportation group (see Figure 3): pipeline transportation and utilities (at 33 percent each) and air, rail, and water transportation (at 32 percent). Chemical manufacturing, computer and electronic manufacturing, and broadcasting (in information) have the lowest ETRs (at 30 percent each).

The mean difference in ETRs among industries for pass-through entities was less than half of a percentage point. The industries with the highest and lowest ETRs among C corporations also were near the top or the bottom of the distribution for pass-through entities.

23. For details of the domestic production activities deduction, see Internal Revenue Service, "Instructions for Form 8903" (January 2013), <http://go.usa.gov/F7Xh> (PDF, 214 KB).

Interindustry variation is significantly greater if differences in the mix of assets are added to the calculations: In that case, the mean difference for C corporations is 6 percentage points, and the mean difference for pass-through entities is 3 percentage points.²⁴ Nevertheless, some of the largest differences among industries are not reflected even in those ETRs. Among the differences not accounted for in CBO's estimates are cost-recovery provisions in the tax code for livestock, timber, and petroleum and mineral reserves, as well as for the intangible costs associated with drilling oil and gas wells.²⁵ Also excluded are the tax credit for certain research and experimentation expenses, the exemption of credit union income, and the tax credit for developing drugs to treat rare diseases. Furthermore, in some industries businesses are more able than they are in others to shift profits offshore to lower-tax jurisdictions. That difference also is not accounted for in CBO's ETR calculations, which do not consider the taxation of income earned abroad.

ETRs on Owner-Occupied Housing

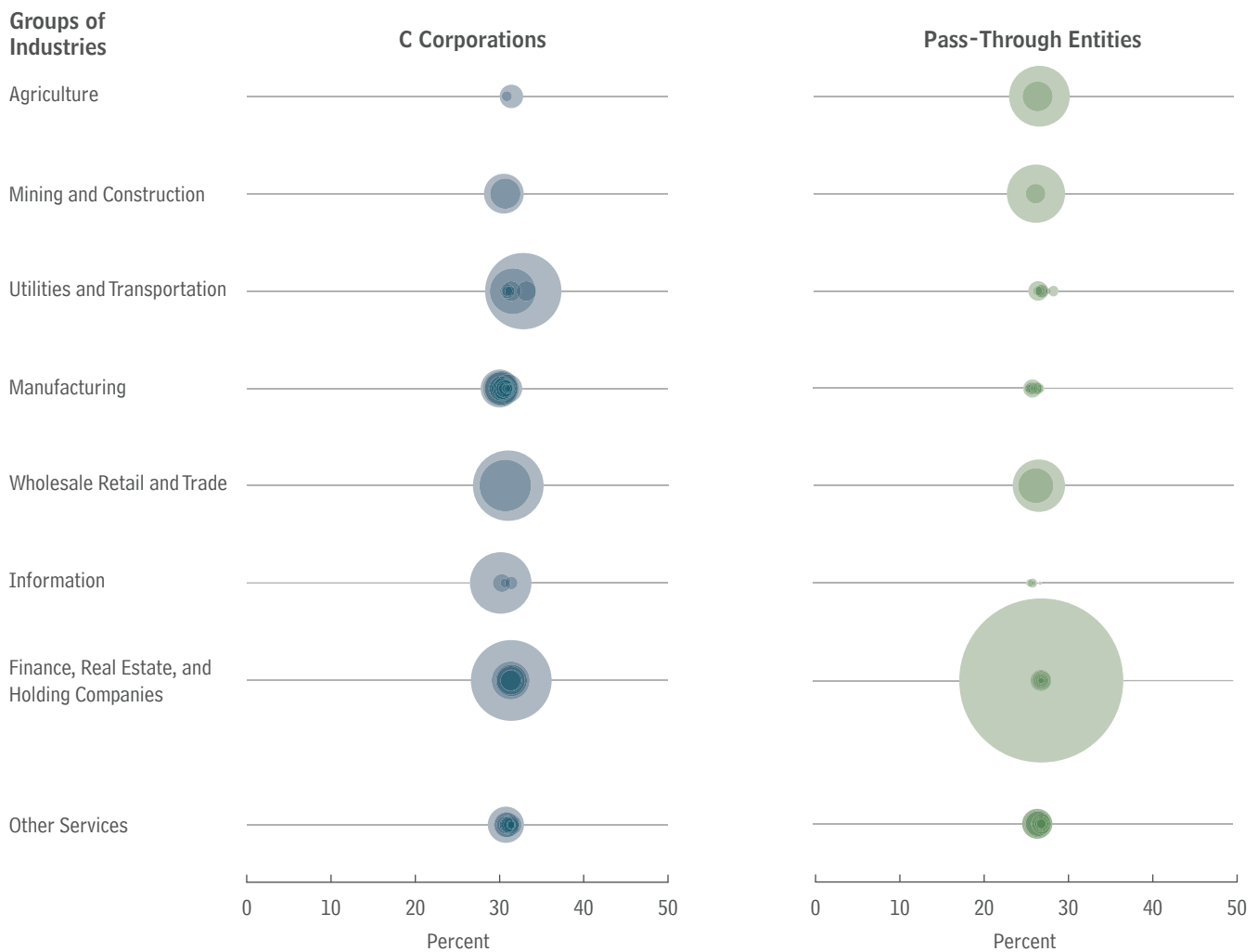
The aggregate ETR on income from owner-occupied housing is close to zero (see Table 2 on page 10) largely because the income implicitly received by owner-occupants is not taxable. The ETR for equity-financed investment is -3 percent; such investment does not generate any taxable income but it nevertheless benefits from the property tax deduction.²⁶ Debt-financed investment, which has an ETR of 1 percent, generates some net taxable income because the marginal rate that applies to the interest received by lenders is, on average, higher than the rate that applies to the amount deducted by borrowers (even after accounting for the interest that is not taxed because some debt instruments are held in tax-favored retirement plans).

24. ETRs for each industry with and without the nontax variations are available in an online supplement to this report, www.cbo.gov/publication/49817.

25. Intangible drilling costs create value for a producing well (the cost of surveys, drainage systems, and drilling mud, for example) but have no salvage value if a well proves to be dry. Normal accounting would require the expenses associated with drilling to be amortized over a well's expected lifetime.

26. The estimated ETR on income from equity-financed owner-occupied housing is negative because state and local property taxes provide a deduction against the federal income tax but are not otherwise included in CBO's estimates of ETRs. If state and local income and property taxes were incorporated into the calculation, the ETR on income from equity-financed owner-occupied housing would be positive.

Figure 3.
Effective Tax Rates, by Industry and Form of Organization



Source: Congressional Budget Office.

Note: Each bubble represents a particular industry within a group. The size of the bubble is proportional to the total value, in dollars, of that industry in the economy. Each industry’s effective tax rate reflects only the way the tax law treats the industry differently. The rates are not affected by the degree to which an industry uses heavily or lightly taxed assets.

The ETR on income from investments in renter-occupied housing—which is taxable—is 26 percentage points higher than that on income from owner-occupied housing (see Table 3 on page 11). The difference between ETRs on income from business investment in general and on income from owner-occupied housing, at 31 percentage points, is even greater. Only the ETR on income from debt-financed investment by C corporations (at –6 percent) is lower than that on income from owner-occupied housing. At –3 percent, the ETR on income from equity-financed investment in owner-occupied

housing is by far the lowest among all categories of equity-financed investments.

Policy Options for the Taxation of Capital Income

CBO assessed the likely effects of three basic approaches to changing the tax treatment of capital income (see Table 1 on page 3). The first, consisting of three options, would reduce the effective tax rate on capital income; the second, also consisting of three options, would limit some of the existing tax preferences for certain types of capital

income; and the third, consisting of two options, would increase the uniformity of taxation in certain respects without changing the overall ETR on capital income.

For the first two approaches, CBO also considered ways in which combining the options would affect ETRs. The combined effects are not simply the sum of the responses to the separate options. For the third approach, CBO adjusted income tax rates to match the overall ETR under current law so that it was possible to focus solely on uniformity rather than on the level of capital taxation.

CBO's Approach to Evaluating the Options

CBO considered two basic questions for each option: How does it affect the overall ETR? How does it affect the uniformity of taxation? Answers to both questions have implications for economic efficiency. A perfectly efficient tax would generate government revenues without affecting society's choices about resource allocation. However, actual tax systems contain provisions that, by reducing taxes on income from certain activities, make some activities more attractive than others and influence people's decisions about working and saving and businesses' decisions about investing. Economic efficiency is reduced if taxpayers forgo some activity that is more productive to engage in another activity that generates a lower before-tax return. Higher ETRs on capital income reduce efficiency to the extent that they discourage investment that might be made if a tax was lower. Uniformity among ETRs enhances efficiency to the extent that it minimizes incentives to invest in certain assets solely on the basis of their tax treatment.

Although a tax system's efficiency depends both on the extent of the tax-induced distortions in rates of return and on the responsiveness of taxpayers to those rates, CBO did not analyze the ways in which the options would affect businesses' or households' investment decisions. Each option would change the after-tax rate of return that a business would realize on its investments. For example, options that lowered the overall ETR would boost the rate of return, inducing more investment, and options that increased the overall ETR would reduce the rate of return and discourage investment. Those changes in investment would be likely to affect interest rates and, by extension, ETRs for every form of organization, source of financing, asset type, and industry. However, CBO did not account for those changes; instead, its estimates were made as though the after-tax rate of return under 2014 law would continue indefinitely.

Options focused on changing the taxation of capital income can also change incentives associated with labor income, but that issue is not addressed in this report. One way in which changes in tax rates on capital income would affect labor income is that the price of capital relative to labor influences how a business allocates its resources between those two factors of production. Therefore, to the extent that tax changes narrowed or widened the difference in tax rates between labor and capital, economic efficiency would be enhanced or reduced. Another way in which changes in tax rates on capital income would affect labor income is that certain sorts of businesses have some ability to characterize income as arising either from labor or capital for tax purposes, regardless of the factor of production from which the income actually derives.²⁷ Therefore, tax changes that reduced the corporate income tax rate or the individual income tax rates on interest, dividends, and capital gains (without affecting the tax rate on labor income) would increase the incentive of businesses to characterize labor income as capital income; options that increased those tax rates would generate the opposite effect. Because mischaracterization does not reflect actual economic changes, it has a minimal effect on economic efficiency; however, holding all else equal, it reduces government revenues.

The discussions of the options make only brief mention of those, and other, potential revenue effects. Otherwise, they focus entirely on the ETRs and their uniformity.

27. For example, a C corporation can characterize labor income as capital income if it pays its officers who are shareholders salaries that are less than the full value of their labor contributions. Alternatively, it can characterize capital income as labor income by paying those officers salaries that exceed the value of their labor contributions. Because salaries are deductible, the first strategy increases taxable profits, whereas the second reduces them. Which strategy, if either, a business might pursue depends on the relative tax rates on salaries (considering both the individual income tax and the payroll taxes for Social Security and Medicare) and on corporate profits (considering both the corporate income tax and the individual income tax on dividends and capital gains). Because of the graduated rate structures of the individual and corporate income taxes, not all C corporations face the same incentives. In general, the corporations in lower corporate tax brackets have a larger incentive to underreport labor income, and those in higher corporate tax brackets have a larger incentive to overreport labor income. For estimates of the incentives that existed between 2000 and 2004, see Nicholas Bull and Paul Burnham, "Taxation of Capital and Labor: The Diverse Landscape by Entity Type," *National Tax Journal*, vol. 61, no. 3 (September 2008), p. 402, <http://tinyurl.com/pz66zhc>.

Other considerations, such as the distribution of the tax burden among income groups and the costs of administration or of compliance with the tax code, were not analyzed.

Options That Would Reduce the Tax on Capital Income

CBO analyzed the effects of three options that would reduce the tax rate on capital income; all would reduce revenues, although those effects are not specifically addressed in this report.

Option 1: Reduce the Top Corporate Income Tax Rate to 25 Percent. With some exceptions, the profits of C corporations are now subject to a top tax rate of 35 percent. This option would reduce the top rate to 25 percent, thereby cutting the overall ETR on capital income by 3 percentage points to 15 percent (see Table 4).

The 29 percent reduction in the top corporate income tax rate (from 35 percent to 25 percent) produces only a 17 percent reduction in the overall ETR (from 18 percent to 15 percent) for two reasons. First, it would have no effect on the ETRs faced by pass-through entities or by owner-occupied housing because their capital income is not subject to the corporate income tax. Second, although the option would reduce the ETR on equity-financed corporate investment, it would increase the ETR on debt-financed investment because the value of depreciation and of interest deductions (in the presence of inflation) would be lower. Specifically, the ETR on income from equity-financed corporate investments would be reduced by 8 percentage points, but the rate on income from debt-financed investments would be increased by 13 percentage points.

A reduction of the top corporate tax rate to 25 percent would narrow the differences in taxation by form of business organization. Under current law, the overall ETR for C corporations is 4 percentage points higher than that for pass-through entities. Under this option, the ETR for C corporations would be 2 percentage points lower than that for pass-through entities. Moreover, it would reduce, by more than 85 percent, the gaps between the ETRs of C corporations and pass-through entities for debt- and equity-financed investments (see Table 5). And by reducing the ETR on C corporations' income from equity-financed investment and raising the ETR for

Table 4.

Effective Tax Rates on Capital Income Under Options That Would Reduce the Tax on Capital Income

	Effective Tax Rate (Percent)	Change From 2014 Law ^a (Percentage points)
Option 1: Reduce the Top Corporate Income Tax Rate to 25 Percent		
Overall	15	-3
C Corporations	25	-6
Equity financed	29	-8
Debt financed	7	13
Pass-Through Entities	27	0
Equity financed	30	0
Debt financed	8	0
Owner-Occupied Housing	-2	0
Equity financed	-3	0
Debt financed	1	0
Option 2: Eliminate Individual-Level Taxes on Dividends and Capital Gains From the Sale of C Corporation Stock		
Overall	16	-2
C Corporations	26	-5
Equity financed	32	-6
Debt financed	-6	0
Pass-Through Entities	27	*
Equity financed	30	*
Debt financed	8	0
Owner-Occupied Housing	-2	*
Equity financed	-3	*
Debt financed	1	0
Option 3: Allow Immediate Expensing of Capital Acquisitions		
Overall	-2	-20
C Corporations	-1	-31
Equity financed	9	-28
Debt financed	-61	-55
Pass-Through Entities	-5	-32
Equity financed	0	-30
Debt financed	-34	-43
Owner-Occupied Housing	-2	0
Equity financed	-3	0
Debt financed	1	0

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percentage points.

a. Permanent features only; provisions that are scheduled to expire have been excluded.

Table 5.**Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Reduce the Tax on Capital Income**

Percent

	Option 1: Reduce the Top Corporate Income Tax Rate to 25 Percent	Option 2: Eliminate Individual-Level Taxes on Dividends and on Capital Gains From the Sale of C Corporation Stock	Option 3: Allow Immediate Expensing of Capital Acquisitions
Between Equity and Debt Financing			
C Corporations	-48	-14	62
Pass-Through Entities	0	*	57
Owner-Occupied Housing	0	-6	0
Between C Corporations and Pass-Through Entities			
Equity Financed	-87	-81	29
Debt Financed	-90	0	87
Among Asset Types			
C Corporations	-25	7	-100
Pass-Through Entities	0	-2	-100
Among Industries			
C Corporations	-27	7	-65
Pass-Through Entities	0	1	-50
Compared With Owner-Occupied Housing			
Renter-Occupied Housing	-2	-2	-89
All Business	-12	-10	-98

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percent.

debt-financed investment, this option would nearly halve the gap in ETRs between the two sources of financing for C corporations. This option also would lessen dispersion among ETRs by reducing the ETRs for every asset type and industry proportionately. For all asset types and industries, the dispersion for C corporations would be reduced by at least one-fourth.

The option would have no effect on the ETR for owner-occupied housing, but because some renter-occupied housing is owned by C corporations, it would slightly narrow the gap between the ETRs for renter- and owner-occupied housing overall. It also would narrow the gap, by 12 percent, between the ETRs on business investment as a whole and on owner-occupied housing.

Option 2: Eliminate Individual-Level Taxes on Dividends and on Capital Gains From the Sale of C Corporation Stock.

The profits of C corporations are taxed first at the corporate level and then a second time at the level of the shareholder. This option would end the double taxation of returns on equity-financed corporate investment by taxing

that income only at the corporate level. The result would be a 2 percentage-point reduction in the overall ETR on capital income, which would decline to 16 percent (see Table 4). All of the change would be attributable to the ETR on income from C corporations' equity-financed investments, which would decline by 6 percentage points.²⁸ This option would have little to no effect on pass-through entities, owner-occupied housing, or debt-financed investment of C corporations.²⁹

28. For this option, the source of equity financing affects the change in the ETR. The option would reduce, by 7 percentage points, the ETR on income from C corporations' investment that is financed by issuing new shares. For investments financed out of retained earnings, the corresponding figure is 5 percentage points (see Appendix B). The 6 percentage-point figure derives from a mixture of those two sources.

29. Most capital gains from the sale of assets other than C corporations' stock arise from returns on intangible assets or from higher-than-normal returns on tangible assets. Neither situation is accounted for in the estimates of ETRs, so this option was not extended to consider such gains.

Like the reduction in corporate tax rates, this option would reduce the ETR on income from investments of C corporations to a rate that is below that for pass-through entities—in this case approximately 1 percentage point lower. That represents an 81 percent reduction in the difference between ETRs by form of business organization (see Table 5). Because the option would not affect debt-financed corporate investment, the gap between the ETRs on equity- and debt-financed investments of C corporations would remain relatively high—declining by 14 percent solely because of the reduction in the ETR on income from equity-financed investment. Furthermore, for C corporations, this option would increase the dispersion by 7 percent among various asset types and industries.

This option, like Option 1, would have no effect on ETRs for owner-occupied housing, but it would slightly narrow the gap between the ETRs on owner- and renter-occupied housing because some renter-occupied housing is owned by C corporations. It also would reduce the gap between the average ETR for businesses and the ETR for owner-occupied housing by 10 percent.

Option 3: Allow Immediate Expensing of Capital Acquisitions. Current law requires businesses to write off the purchase of capital assets over time, although frequently the depreciation allowance outpaces the asset's economic depreciation. This option would permit businesses to write off the entire cost of new (but not used) assets in the year of acquisition, and it thus would reduce the overall ETR on capital income by 20 percentage points—roughly to zero (see Table 4). For C corporations, the ETR on income from equity-financed investments would be 9 percent; for pass-through entities, the ETR would be zero. The rate for C corporations would remain above zero because dividends and capital gains from equity-financed capital investment would still be subject to taxation at the individual level.

The ETRs on income from debt-financed investments, however, would be sharply negative, at –61 percent for C corporations and –34 percent for pass-through entities. Thus, the rate of return on debt-financed investment would be substantially increased by the tax code, such that tax savings would account for more than one-third of the return.³⁰ (That subsidy associated with expensing could be forestalled by simultaneously disallowing the deduction for interest payments.) This option would nearly double the gap in ETRs between C corporations and pass-through entities for debt-financed investments;

it would increase the gap for equity-financed investments by 29 percent (see Table 5). Moreover, it would widen the gap in ETRs between debt and equity financing for C corporations and for pass-through entities by more than 50 percent. However, the option would reduce variation in ETRs on several other dimensions: By reducing the ETR on each asset type almost to zero, this option would eliminate all variation among asset types. The option would eliminate one-half to two-thirds of the variation among industries—but not more because it would leave intact the deduction for domestic production activities. And it would leave only very small gaps between the ETRs for owner- and renter-occupied housing and between the ETRs for business investment and owner-occupied housing.

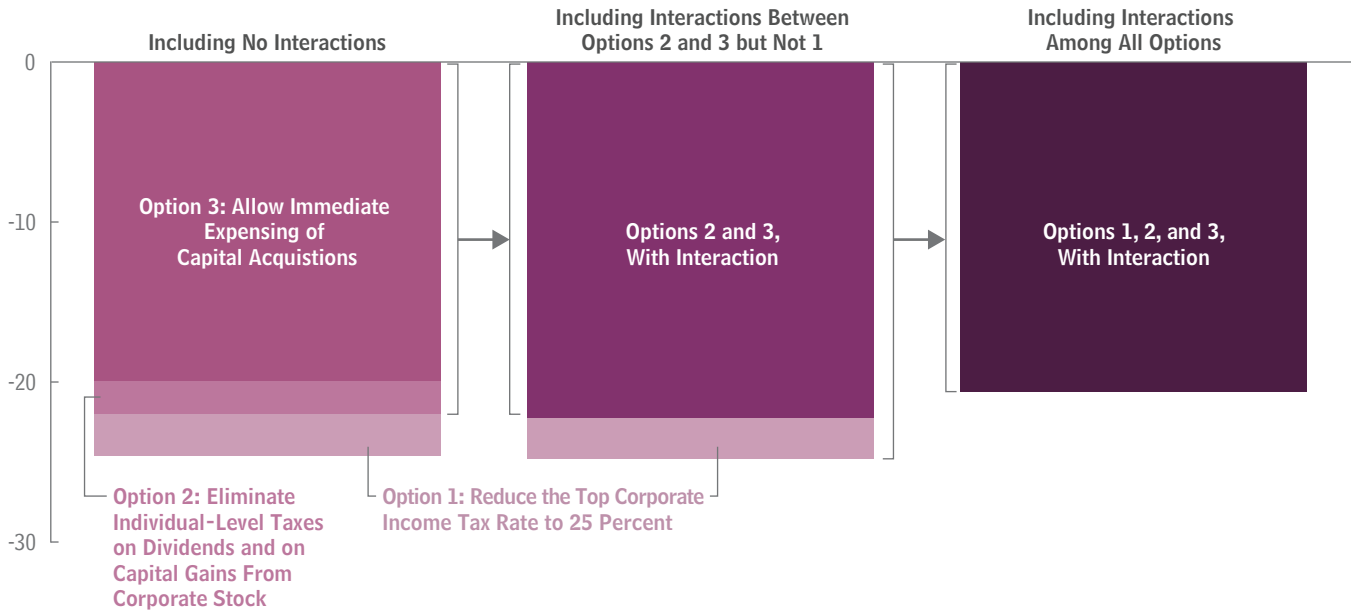
Combinations of Options 1, 2, and 3. The ETR reductions associated with the first three options sum to 25 percentage points: 3 percentage points from reducing the corporate tax rate (Option 1), 2 percentage points from the dividend and capital gain exclusion (Option 2), and 20 percentage points from expensing (Option 3). Because of certain interactions among the three options, however, the reduction in the ETR arising from the three options combined would not equal the sum of the changes associated with each separately (see Figure 4).

There is little interaction between Options 2 and 3. Thus, if taxes on dividends and capital gains were eliminated at the same time that the expensing of capital acquisitions was permitted, the overall ETR on capital income would be reduced by 22 percentage points—roughly the sum of the reduction attributable to Options 2 and 3 separately. Adding the 3 percentage points from

30. When tax rates are negative, after-tax income is greater than before-tax income. Thus, a tax rate of –50 percent on \$1,000 in income yields an after-tax income of \$1,500—one-third of which constitutes the \$500 negative tax liability supplied by the government. Because of the interest deduction, negative effective tax rates on business income occur only for debt-financed investments. However, under current law, taxable income cannot drop below zero to generate a negative tax liability; instead, losses are carried back or forward to offset income in other years. Thus, there is no mechanism by which the government could actually supply its \$500 contribution in the above example if 100 percent of an investment was financed by debt. As a practical matter, however, debt financing is generally used in combination with equity financing. In such cases, the government's contribution toward a negative tax rate would take the form of offsetting the positive tax liability generated by the equity-financed side of the investment.

Figure 4.**Interactions Among Options That Would Reduce the Tax on Capital Income**

Percentage-Point Change in Effective Tax Rates



Source: Congressional Budget Office.

Option 1—that is, still ignoring any interactions between that option and the other two options—yields roughly the same 25 percentage-point reduction as the sum with no interactions.

Option 1, however, interacts strongly with the other two options. Reducing the corporate income tax rate at the same time the other two options were enacted would not cause the ETR to fall any lower. In fact, the combined reduction relative to 2014 law would be 21 percentage points—1 percentage point less than if the other two options were enacted without Option 1. To understand why, recall first that the expensing option generated an ETR of –61 percent for debt-financed investment of C corporations. The lower tax rate, in the presence of inflation, would reduce the value of interest deductions—a major factor in explaining the negative rate generated by expensing alone. Thus, when the corporate tax rate falls, the ETR on income from debt-financed investments of C corporations would be –21 percent rather than –61 percent. When expensing is allowed, reducing the corporate income tax rate has virtually no effect on the ETR for equity-financed investments, rendering the exemption of dividends and capital gains largely irrelevant. Thus, the overall effect of lowering the corporate

tax rate when the other two options are in place is to increase the ETR relative to what it would have been if expensing was allowed and if taxes had been repealed only on dividends and capital gains.

Although implementing the three options together would essentially render an ETR of zero on income from equity-financed investment, the combination of options would produce significantly negative ETRs on income from debt-financed investments (attributable entirely to expensing), whether by C corporations or by pass-through entities. To implement all three options without generating negative ETRs on debt-financed investments, deductible interest could be limited to a certain percentage of interest payments. CBO estimates that, when combined with the three options, limiting interest deductions to approximately 65 percent of interest payments in the case of C corporations and to 67 percent in the case of pass-through entities would result in ETRs on debt-financed investments of roughly zero and an overall negligible rate on all investment.

Options That Would Reduce or Eliminate Tax Preferences for Capital Income

CBO analyzed three options that would reduce or

Table 6.

Effective Tax Rates on Capital Income Under Options That Would Reduce or Eliminate Tax Preferences for Capital Income

	Effective Tax Rate (Percent)	Change from 2014 Law ^a (Percentage points)
Option 4: Tax As Ordinary Income All Dividends and Long-Term Capital Gains From the Sale of C Corporation Stock^b		
Overall	19	2
C Corporations	34	4
Equity financed	42	4
Debt financed	-6	0
Pass-Through Entities	27	*
Equity financed	30	*
Debt financed	8	0
Owner-Occupied Housing	-2	*
Equity financed	-3	*
Debt financed	1	0
Option 5: Disallow New Contributions to Tax-Favored Retirement Accounts		
Overall	23	5
C Corporations	38	7
Equity financed	41	4
Debt financed	19	25
Pass-Through Entities	28	2
Equity financed	30	*
Debt financed	20	11
Owner-Occupied Housing	2	4
Equity financed	-3	*
Debt financed	14	13
Option 6: Conform Tax Depreciation to Economic Depreciation		
Overall	21	3
C Corporations	35	4
Equity financed	41	3
Debt financed	-3	2
Pass-Through Entities	30	3
Equity financed	33	3
Debt financed	11	3
Owner-Occupied Housing	-2	0
Equity financed	-3	0
Debt financed	1	0

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percentage points.

- Permanent features only; provisions that are scheduled to expire have been excluded.
- Imposing a 31.8 percent maximum rate on dividends and capital gains would reduce the change from 2014 law by 38 percent.

eliminate tax preferences that favor certain types of capital income; all would increase federal revenues.³¹

Option 4: Tax as Ordinary Income All Dividends and Long-Term Capital Gains From the Sale of C Corporation Stock. Tax rates are lower for long-term capital gains and, recently, for dividends than for ordinary income (which includes wages, interest, and the profits of pass-through entities). In 1997, the maximum rate on capital gains was cut from 28 percent to 20 percent; in 2003, it was cut again to 15 percent.³² In 2013, the maximum was raised to 23.8 percent (as a result of an increase in the top tax rate on capital gains and dividends to 20 percent under the American Taxpayer Relief Act and a new 3.8 percent tax on capital income for high-income taxpayers imposed under the Affordable Care Act). Before 2003, dividends were taxed at the same rates as ordinary income, although small exclusions were allowed in some cases. Since then, qualified dividends and long-term capital gains have been taxed at matching rates. (Qualified dividends are generally paid by domestic corporations or certain foreign corporations, including, for example, corporations whose stock is traded in one of the major securities markets in the United States.)

Option 4 would tax dividends and long-term capital gains at the same rate as ordinary income. The result would be an increase in the overall ETR on capital income of 2 percentage points (see Table 6). This option would significantly affect only the ETR on income from equity-financed investment by C corporations, increasing it by 4 percentage points.³³ That amounts

31. Related options that would reduce or eliminate tax preferences for capital income are discussed in Congressional Budget Office, *Options for Reducing the Deficit: 2014 to 2023* (November 2013), www.cbo.gov/budget-options/2013/44687. Those options would tax capital gains at a higher rate, limit contributions to retirement plans, and lengthen depreciation periods for equipment. Revenue estimates for that report, provided by the staff of the Joint Committee on Taxation, are updated in *Options for Reducing the Deficit: 2015 to 2024* (November 2014), www.cbo.gov/budget-options/2014.

32. Since 1991, certain provisions of the tax code that are otherwise unrelated to capital gains have effectively raised the actual maximum rate on capital gains above the nominal maximum.

33. For Option 4, the source of equity financing affects the change in the ETR. The change would be roughly half a percentage point greater for investment financed with new shares and half a percentage point less for investment financed out of retained earnings. (Appendix B presents more details on sources of equity financing.)

Table 7.

Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Reduce or Eliminate Tax Preferences for Capital Income

Percent

	Option 4: Tax As Ordinary Income All Dividends and Long-Term Capital Gains From the Sale of C Corporation Stock^a	Option 5: Disallow New Contributions to Tax-Favored Retirement Plans	Option 6: Conform Tax Depreciation to Economic Depreciation
Between Equity and Debt Financing			
C Corporations	10	-48	3
Pass-Through Entities	*	-52	2
Owner-Occupied Housing	5	>100	0
Between C Corporations and Pass-Through Entities			
Equity Financed	57	52	6
Debt Financed	0	-93	3
Among Asset Types			
C Corporations	-5	-10	-87
Pass-Through Entities	2	-1	-86
Among Industries			
C Corporations	-5	-10	-49
Pass-Through Entities	-1	-3	-23
Compared With Owner-Occupied Housing			
Renter-Occupied Housing	1	-6	24
All Business	8	4	11

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percent.

a. Imposing a 31.8 percent maximum rate on dividends and capital gains would reduce the values shown by 38 percent.

to increasing the gap between the ETRs on income from debt- and equity-financed investments of C corporations by 10 percent and increasing the gap between the ETRs on income from equity-financed investments of C corporations and pass-through entities by 57 percent (see Table 7).³⁴ For C corporations, this option also would slightly lessen the dispersion of ETRs among types of assets and industries. Finally, because it would increase ETRs on C corporations but not on owner-occupied housing, this option would somewhat increase the gap between the ETRs on owner-occupied and

renter-occupied housing (some of which is owned by C corporations) and between the ETRs on owner-occupied housing and businesses generally.

Option 5: Disallow New Contributions to Tax-Favored Retirement Plans. Under current law, taxpayers can make (or receive from their employers) contributions to retirement plans in which the accrual of interest, dividends, and capital gains is essentially free from taxation. Subject to certain income restrictions, in 2014 taxpayers are permitted to contribute up to \$5,500 to an IRA (\$6,500 if age 50 or older). If an employer offers a 401(k)-type plan, the taxpayer may contribute up to \$17,500 (\$23,000 if age 50 or older), and employers may contribute up to \$52,000 (minus the employee’s contribution) or enough to fund an annual benefit of up to \$210,000, depending on the type of plan.

34. A similar option would cap the tax rate on dividends and long-term capital gains at 31.8 percent (the pre-1997 maximum of 28 percent plus the 3.8 percent tax imposed under the Affordable Care Act). The effects of that option would be 62 percent of the effects of Option 4, which would tax dividends and capital gains as ordinary income.

Option 5 would not permit any new contributions to be made to those tax-favored plans. Households could continue to add to their retirement savings, but new contributions would go into regular investment accounts. As a result, any interest, dividends, or capital gains realized within those accounts would be taxable. (Although this option could induce a change in people's saving, CBO did not assess that effect.)

Option 5 would increase the overall ETR on capital income to 23 percent, a 5 percentage-point increase over current law (see Table 6). The effects would extend to equity-financed corporate investment and to all forms of debt-financed investment, including owner-occupied housing (because mortgage-backed securities can be held inside retirement plans).

This option would result in more uniform ETRs on income from debt- and equity-financed business investments. For C corporations, the increase in ETRs would be greater for income from debt-financed investments because interest income outside retirement plans is taxed at a higher rate than are dividends and capital gains from equity-financed investments. Because the current-law ETR on income from debt-financed investment is lower than the rate that would result from this option, the net effect would be a 48 percent reduction in the ETR gap between equity and debt financing for C corporations (see Table 7). For pass-through entities, the change in the gap between equity and debt financing would be even greater—it would decline by 52 percent.

This option also would reduce the gap between the ETRs on income from debt-financed investment for C corporations and pass-through entities by more than 90 percent. However, for equity-financed investment, the option would *increase* the gap between C corporations and pass-through entities by 52 percent because the ETR for C corporations, already the higher of the two, would go up, whereas the ETR for pass-through entities essentially would be unaffected.

Less uniform ETRs would result for housing under Option 5. Mortgage-backed securities now can be held in retirement plans, but owner-occupied housing equity cannot be. Thus, the option would increase the ETR on income from debt-financed investment in owner-occupied housing but not on income from equity-financed investment. The difference between the rates for the two sources of financing would more than double.

The increase in the overall ETR on owner-occupied housing would be less than that on businesses, and the gap between them would widen.

Option 6: Conform Tax Depreciation to Economic Depreciation. Under current law, most equipment and certain structures depreciate more rapidly for tax purposes than they actually wear out or become obsolete. For most structures and a few types of equipment, however, the opposite is true—tax depreciation occurs more slowly than economic depreciation does. This option would make the tax code's depreciation schedules for everything other than land and inventories, which are not depreciated for tax purposes, conform to the rates for economic depreciation.

Option 6 would increase the overall ETR on capital income by 3 percentage points to 21 percent (see Table 6).³⁵ The ETR on income from business investment would increase by an amount between 2 and 4 percentage points, depending on the form of organization and source of financing. This option would have a minimal effect on the gaps between debt- and equity-financed investments or between C corporations and pass-through entities (see Table 7). However, by eliminating depreciation rules that favor specific asset types, the option would enhance uniformity: It would cause a roughly 85 percent reduction in the dispersion among asset types for C corporations and pass-through entities. Similarly, the elimination of depreciation rules that favor particular industries would reduce the dispersion among industries by 49 percent for C corporations and by 23 percent for pass-through entities. Because this option would extend the depreciation period for renter-occupied housing and for most business assets but have no effect on owner-occupied housing (which cannot be depreciated for tax purposes), it would increase the gap between owner-occupied and renter-occupied housing and that between owner-occupied housing and business generally.

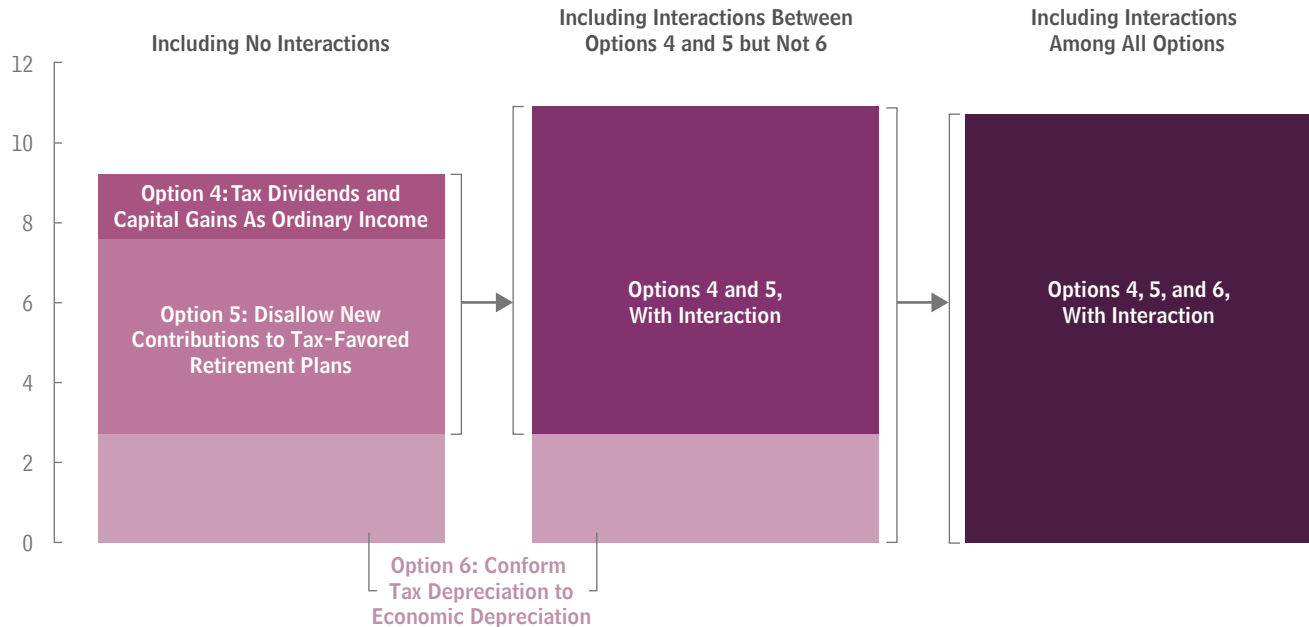
Combinations of Options 4, 5, and 6. The ETR increases associated with Options 4, 5, and 6 sum to 9 percentage points (see Figure 5). Because of various interactions

35. This is the only policy option that would yield substantially different results if intangible assets were included. Such assets generally are expensed under current law; requiring them to be depreciated for tax purposes as their value declines would represent a bigger relative tax increase for those assets than it represents for tangible assets.

Figure 5.

Interactions Among Options That Would Reduce or Eliminate Tax Preferences for Capital Income

Percentage-Point Change in Effective Tax Rates



Source: Congressional Budget Office.

among the three options, however, the increase in the ETR resulting from the three options combined would not equal the sum of the changes associated with each separately.

If the options were enacted separately, taxing dividends and capital gains as ordinary income would not affect the dividends and capital gains that accrue within retirement plans; if new contributions to tax-favored retirement plans were disallowed, more dividends and capital gains would be taxed, but at the lower-than-ordinary rate specified in current laws. Dividends and currently realized capital gains within retirement plans would be taxed at ordinary rates only if Options 4 and 5 were combined, making the combined increase in the ETR 2 percentage points higher than the sum of the increases from the options separately. Option 6—to require conformity between tax depreciation and economic depreciation—would have little bearing on the other two options. Implementing all three options together would increase the ETR by 11 percentage points—about 2 percentage points more than the sum of the increases in the ETR from each option separately.

Options That Would Narrow Specific Disparities Among Tax Rates Without Changing the Overall ETR

All of the options discussed so far would affect uniformity among tax rates to some extent but also would change the overall ETR on capital income. The two options in this section, however, were designed to achieve greater uniformity of ETRs in at least one dimension (but not necessarily every dimension) without changing the overall ETR. To maintain a constant overall ETR on capital income, Options 7 and 8 include changes to the tax rates under the regular income tax to offset changes to the tax base.³⁶

Option 7: Eliminate Itemized Deductions for Mortgage Interest and Property Taxes and Reduce Individual Tax Rates. Under this option, homeowners could no longer deduct residential mortgage interest or property taxes

36. The two options do not include changes in special rates for dividends and long-term capital gains or in the alternative minimum tax (AMT). The AMT makes it more difficult for people to escape taxation on some income because its tax base includes many items that are excluded from the regular income tax. Taxpayers must calculate and then pay the higher of two amounts—the regular tax and the AMT. The highest statutory tax rate under the AMT is 28 percent.

Table 8.
Effective Tax Rates on Capital Income
Under Options That Would Narrow Specific
Disparities Among Tax Rates Without
Changing the Overall Effective Tax Rate

	Effective Tax Rate (Percent)	Change from 2014 Law ^a (Percentage points)
Option 7: Eliminate Itemized Deductions for Mortgage Interest and Property Taxes and Reduce Individual Tax Rates		
Overall	18	*
C Corporations	29	-2
Equity financed	37	*
Debt financed	-18	-12
Pass-Through Entities	17	-10
Equity financed	19	-11
Debt financed	7	-2
Owner-Occupied Housing	8	10
Equity financed	0	3
Debt financed	22	21
Option 8: Limit Allowable Deductions for Business Interest and Reduce Corporate and Individual Tax Rates		
Overall	18	*
C Corporations	31	*
Equity financed	34	-4
Debt financed	19	24
Pass-Through Entities	27	*
Equity financed	29	-2
Debt financed	19	11
Owner-Occupied Housing	-2	*
Equity financed	-3	*
Debt financed	1	*

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percentage points.

a. Permanent features only; provisions that are scheduled to expire have been excluded.

(although owners of rental property could continue to deduct those costs as ordinary business expenses). To maintain the same ETR overall, this option would reduce all regular individual income tax rates by 35 percent (not percentage points). Because the reduction in marginal tax rates would apply to income from wages and salaries as well as to capital income, this option would result in a significant loss of federal revenues.

Under Option 7, the ETR on all forms of business investment would decline because of the reduction in

individual income tax rates (see Table 8). Because of the loss of the property tax deduction, the ETR on income from equity-financed investment in owner-occupied housing would no longer be negative but would be zero—an increase of 3 percentage points. At 22 percent, the ETR on income from debt-financed, owner-occupied housing would increase by 21 percentage points.

This option would cause a 70 percent reduction in the ETR gap between owner- and renter-occupied housing (see Table 9) because, in addition to raising the ETR on owner-occupied housing by 10 percentage points, the lower tax rates would result in an 8 percentage-point reduction in the ETR on renter-occupied housing. Furthermore, this option would reduce the gap between owner-occupied housing and business generally by 48 percent.

Option 7 would have mixed effects on the uniformity of taxation of businesses' income. It would widen the gap between the ETRs for C corporations and pass-through entities. Because it would lower individual income tax rates, it would increase uniformity among types of assets, industries, and sources of financing for pass-through entities but not for C corporations. Finally, the option would increase the ETR gap between debt- and equity-financed investments by C corporations and in owner-occupied housing (by more than double in the latter case) but would reduce the ETR gap between the debt- and equity-financed investments of pass-through entities.

Option 8: Limit Allowable Deductions for Business Interest and Reduce Corporate and Individual Tax Rates.

By law, businesses have been able to deduct all of their interest expenses. For the purposes of federal revenues, that deduction is partly offset by the tax that lenders must pay on the interest they receive from borrowers. If the interest is received within a tax-favored retirement plan, however, it effectively escapes taxation. CBO estimates that about 33 percent of interest payments made by C corporations and 14 percent of interest payments made by pass-through entities in 2007 were received within tax-favored plans and therefore were never taxed. To approximate that under this option, C corporations could deduct 70 percent of their interest expenses, and, to maintain the ETR on C corporation income, the top corporate tax rate would be lowered from the current 35 percent to approximately 31 percent. Pass-through entities could deduct 85 percent of their interest expenses, and a reduction of about 5 percent in regular

Table 9.**Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Narrow Specific Disparities Among Tax Rates Without Changing the Overall Effective Tax Rate**

Percent	Option 7: Eliminate Itemized Deductions for Mortgage Interest and Property Taxes and Reduce Individual Tax Rates	Option 8: Limit Allowable Deductions for Business Interest and Reduce Corporate and Individual Tax Rates
Between Equity and Debt Financing		
C Corporations	27	-65
Pass-Through Entities	-42	-57
Owner-Occupied Housing	>100	-6
Between C Corporations and Pass-Through Entities		
Equity Financed	>100	-26
Debt Financed	74	-96
Among Asset Types		
C Corporations	3	-14
Pass-Through Entities	-28	-6
Among Industries		
C Corporations	3	-12
Pass-Through Entities	-36	-3
Compared With Owner-Occupied Housing		
Renter-Occupied Housing	-70	1
All Business	-48	*

Source: Congressional Budget Office.

Note: * = between zero and 0.5 percent.

individual income tax rates would serve to maintain the ETR on the income of pass-through entities.

This option would reduce the ETR on income from equity-financed investments by 4 percentage points (to 34 percent) for C corporations and by 2 percentage points (to 29 percent) for pass-through entities (see Table 8). It would increase the ETR on income from debt-financed investments by 24 percentage points (to 19 percent) for C corporations and by 11 percentage points (to 19 percent) for pass-through entities. The effects on owner-occupied housing would be minimal.

Option 8 would reduce the gap between the ETRs for equity- and debt-financed investments by 65 percent for C corporations and by 57 percent for pass-through entities (see Table 9). Similarly, it would reduce the ETR gap between C corporations and pass-through entities by 26 percent for equity-financed instruments and by 96 percent for debt-financed instruments. Finally, although for C corporations it would reduce the dispersion among asset types by 14 percent and among industries by 12 percent (much smaller percentage reductions apply to pass-through entities), it would not significantly reduce the gap between ETRs on business investment and on investment in owner-occupied housing.



Appendix A: CBO's Methodology for Estimating Effective Tax Rates

Many analysts use effective marginal tax rates (hereafter referred to as effective tax rates or ETRs) to evaluate the taxation of capital income and analyze the ways in which distortions created by the tax system affect people's saving habits and businesses' investment decisions. In such analyses, ETRs are more useful than are statutory or average tax rates because an ETR summarizes in a single value many aspects of the tax code that affect rates of return over an investment's lifetime.

The details of the calculation of a specific ETR differ, however, depending on whether the investment is made by a C corporation (a business that is subject to the corporate income tax), by a pass-through entity (a business whose profits are passed along to its owners and then subject to the individual income tax), or by an individual who is building or upgrading a home.¹ Such calculations must use substantial amounts of data gathered from many sources and account, at least roughly, for many specific factors in the economy that influence investors' decisions. In this report, the Congressional Budget Office (CBO) excluded intangible assets that the tax code treats differently from tangible assets because data on their value generally is less available and the concept of the marginal investment is less applicable to intangible than to tangible assets.

1. For further explanation of the methodology of calculating ETRs and examples of their use, see James B. Mackie III, "Unfinished Business of the Tax Reform Act of 1986: An Effective Tax Rate Analysis of Current Issues in the Taxation of Capital Income," *National Tax Journal*, vol. 55, no. 2 (June 2002), pp. 293–337, <http://tinyurl.com/ptz6372>; and Jane G. Gravelle, *The Economic Effects of Taxing Capital Income* (MIT Press, 1994).

Defining Effective Tax Rates

Typically, ETRs on capital income are calculated with reference to their effect on the rate of return on a new capital investment. The first step is to calculate the "tax wedge"—the difference between the before- and after-tax rates of return on an investment. The tax wedge is then divided by the before-tax rate of return to arrive at the effective tax rate. Thus, if taxes reduce a 6 percent before-tax rate of return to a 4 percent after-tax rate of return, the tax wedge would be 0.02 (0.06 – 0.04), and the ETR would be 33 percent (0.02/0.06). ETRs apply to an additional dollar of income and thus do not represent the average rate on all capital income.

Statutory and effective tax rates differ in several important ways. First, current law sets a variety of rates for taxing capital income, depending, for example, on the investor's tax bracket; whether the income is received in the form of interest, dividends, or capital gains; and whether the investor is subject to the corporate income tax. Similarly, income-based phaseouts of certain tax provisions cause taxpayers to face tax rates that are higher than the statutory rate over the phaseout range. ETRs condense all of those circumstances into a single rate that also accounts for provisions that cause taxable income to deviate from true, or economic, income. In addition, statutory tax rates apply to taxable income only for a single year, but ETRs summarize in one number the provisions of the tax code that apply to economic income over the lifetime of a given investment. Specifically, an ETR is a constant rate that, if applied to the return on an investment over its lifetime, would yield the same after-tax rate

of return as would a statutory rate applied to taxable income in each year.²

One example of the difference in the effects of tax depreciation and economic depreciation illustrates the reason that it is important not to focus on a single year. The federal tax code allows businesses to deduct 35 percent of the purchase price of trucks during the first year they are placed in service for local commercial use.³ But with normal use, the economic depreciation on a truck—its loss in value—is about 19 percent over the same period.⁴ Because tax depreciation exceeds the rate of economic depreciation in that first year, the taxable income from the investment would be less than the economic income. The business thus pays lower income taxes, and the after-tax return on the investment is higher, than would be the case if tax rates applied to the company's economic income.

The reverse case would apply in later years. Tax law allows trucks to be fully depreciated after five and one-quarter years, although normally those trucks would still retain some value to their owners beyond that period. Trucks that remained in use would generate no depreciation deductions even though their economic depreciation would continue. That imbalance would boost taxable income above economic income from the trucks after the fifth year, and the company would pay more in taxes and receive less in after-tax returns than it would if the tax rates applied to economic income. ETRs provide a constant tax rate that can be applied to economic income over the lifetime of an asset to account for both the overstated and the understated tax burden in particular years.

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2. In CBO reports that present overall effective tax rates or effective tax rates on labor income, the focus is on a single year rather than the lifetime of an investment. See, for example, Congressional Budget Office, *Effective Marginal Tax Rates for Low- and Moderate-Income Workers* (November 2012), www.cbo.gov/publication/43709, and *Effective Marginal Tax Rates on Labor Income* (November 2005), www.cbo.gov/publication/17453. Only in reports that focus on capital income do effective tax rates summarize information over longer periods.
 3. In the example, trucks are placed in service at the middle of the first quarter of a year to match a convention of tax-depreciation rules that allows seven-eighths of a full year's tax depreciation for an asset that is placed in service during the first quarter of a year. For simplicity, the example also uses an inflation rate of zero.
 4. See the "Other Industries" line under "Trucks, Buses, and Truck Trailers" in Bureau of Economic Analysis, "BEA Depreciation Estimates" (accessed December 16, 2014), http://www.bea.gov/iTable/index_FA.cfm.

Depreciation allowances are not the only features of the tax code that have multiple-year implications. The deferral of taxation of capital gains is another example. In that case, the statutory tax rate is the same as that for dividends, although it has no effect until the asset is sold. Deferral lowers the present value of the tax and, in turn, the ETR.⁵ It also lowers the ETR on income earned within nonqualified annuities and whole-life insurance policies.

In its analysis, CBO computed ETRs for a prospective investment that would just break even—that is, the cost of the investment would be expected to just equal the market rate of return (roughly the equivalent of the return on an index fund of corporate bonds or equities, depending on the source of financing). Such tax rates can be an important factor in the decision to invest. Businesses tend to invest in the most profitable projects first and to continue investing in others of declining profitability until they reach the break-even or marginal project. Additional projects might be rejected if they would be no more profitable than investing in an index fund. Reducing the ETR would change the identity of the break-even project to one with a lower before-tax rate of return. As a result, more ventures would become sufficiently profitable investments. In contrast, increasing the ETR would make more projects insufficiently profitable, thereby discouraging investment.

Prospective marginal tax rates (the share of an additional dollar of anticipated income that would be paid in taxes) are better guides to investment incentives than are average tax rates (the actual taxes paid by a business in the past year, divided by the past year's profits). As in the truck example above, profits in a particular year from an earlier capital investment can be under- or overstated because the age of an existing asset could place that asset in a more or less accelerated portion of the tax depreciation schedule. Inflation distorts taxable profits so that average tax rates do not match ETRs. Any change in tax law will make average tax rates from earlier years inapplicable to current investment decisions; and even after several years, a change in law can cause average tax rates

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5. Present value is a single number that expresses a flow of current and future income, or payments, in terms of a lump sum received, or paid, today; the present value depends on the rate of interest, known as the discount rate, that is used to translate future cash flows into current dollars. For example, applying a discount rate of 5 percent to a nominal value of \$1,050 available one year from now results in a present discounted value of \$1,000.

to differ from the rates on new investment because investments in place before enactment can be exempted. Finally, average tax rates on current profits can fluctuate with the losses that profitable businesses carry forward into the current year and those that unprofitable businesses carry back to earlier years.

Estimating Effective Tax Rates

In this analysis, CBO estimated ETRs differently for investments made by C corporations, pass-through entities, and homeowners. Like any summary measure, however, the agency's calculations could not capture the full complexity of tax law or the investment environment.

C Corporations

There are two ways to view C corporations' ETRs. One is the effective corporate tax rate, which ignores individual-level taxes on dividends and capital gains; the other is the effective total tax rate, which accounts for both individual and corporate taxation. Calculating the effective corporate tax rate illustrates the difference between that rate and the statutory marginal corporate tax rate. That difference is useful to the extent that domestic and foreign investments compete with each other in a worldwide market for the same dollar of saving, in which case the interest, dividends, and capital gains received by savers would not necessarily be subject to the U.S. individual income tax. However, the U.S. economy is so large that most funds invested here originate with U.S. residents, and for simplicity this analysis includes only the effects of domestic saving on domestic investment. Under those conditions, the resulting income in the form of interest, dividends, and capital gains is subject to the individual income tax, and it is the effective total tax rate, which accounts for individual-level taxes, that should drive decisionmaking about how to save (and, by extension, how to invest). This report is concerned with the effective total tax rate.⁶

A C corporation considering an investment must expect that the investment will return enough to pay investors at the same rate they could obtain from other investments. In particular, a market interest rate must be paid on

borrowed funds, and a competitive rate of profit must be expected on equity raised from the sale of new stock or from the reinvestment of profits from past investments. Those returns are taxed at the individual level, resulting in an after-tax rate of return (s) that can be expressed as the weighted average of the real (inflation-adjusted) after-tax interest rate and the real after-tax return on equity, as follows:

$$s = f \cdot [i(1 - t_i) - \pi] + (1 - f) \cdot E \cdot (1 - t_e) \quad (1)$$

where f is the fraction of the investment financed by debt,

i is the nominal market interest rate,

t_i is the individual tax rate on interest income,

π is the inflation rate,

E is the real return on equity, and

t_e is the individual tax rate on income from equities.

The tax rates in that formula depend on several factors:

- The statutory tax rate on the income (which depends on the investor's tax bracket) and the form in which the income is received (interest is taxed at ordinary rates, but income from equities—dividends and capital gains—is taxed at lower rates);
- The disposition of profits—in determining the value of t_e , whether profits are distributed as dividends (which are taxed immediately) or retained (which are taxed as capital gains when the stock is sold); and
- The placement of the marginal dollar of saved income—whether deposited in a fully taxable account, a tax-deferred savings vehicle (such as a nonqualified annuity or whole-life insurance policy), or a nontaxable savings vehicle (such as a qualified retirement plan).

As for the before-tax rate of return, the expected earnings on a C corporation's investment must be sufficient to recover the capital contributed by investors and to pay any corporate income taxes. The rate at which the initial contribution must be recovered depends on the rate at which the asset's earning power depreciates. The amount needed to cover the corporate income tax depends on the statutory tax rate, the value of allowable depreciation deductions, and the investment's source of financing. If the investment is financed with equity, the returns must

6. For a discussion of the effective corporate tax rate, see Congressional Budget Office, *Taxing Capital Income: Effective Rates and Approaches to Reform* (October 2005), pp.16–17, www.cbo.gov/publication/17393; values by type of asset and industry are available in an online supplement to this report, www.cbo.gov/publication/49817.

be large enough to pay the corporate tax on the profits. If funded through borrowing, however, the profits need not cover the corporate tax as long as the interest expenses are deductible.

Anticipated inflation also affects the required return, although the direction of the effect depends on opposing factors. Inflation raises the required return by reducing the value of depreciation deductions; it lowers that return by increasing the value of interest deductions relative to earnings.

The real before-tax rate of return covering those costs (ρ) can be expressed as follows:

$$\rho = [(r' + \delta)(1 - uz)/(1 - u)] - \delta \quad (2)$$

where $r' = f \cdot [i(1 - uk) - \pi] + (1 - f) \cdot E$ is the corporate discount rate, which reflects the deductibility of interest;

u is the corporate tax rate (adjusted to account for the domestic production activities deduction, which is a fixed percentage of net income from such qualifying activities as manufacturing, construction, and software development);

k is the deductible share of the interest paid;

δ is the rate at which the economic value of the asset depreciates; and

z is the present value of tax depreciation allowances measured as a share of investment.⁷

The tax wedge is $\rho - s$, and the effective tax rate is as follows:

$$\text{ETR} = \frac{\rho - s}{\rho} \quad (3)$$

Both ρ and the ETR typically vary among asset types and industries because of differences in the relationship

7. The expression $r' + \delta$ is the cost of paying the investor's return and recovering the original value of the capital. The expression $1 - uz$ adjusts those costs for the value of tax depreciation. Their product divided by $1 - u$ gives the before-tax profit required to cover taxes, investor return, and recovery of capital. Subtracting δ limits the profit to just the amount needed to cover investor return and corporate taxes. For details on calculating the value of z , see Congressional Budget Office, *Computing Effective Tax Rates on Capital Income* (December 2006), pp. 13–19, www.cbo.gov/publication/18259.

between economic and tax depreciation. The more accelerated an asset's tax depreciation allowances are relative to its economic depreciation, the lower its required return before taxes and the lower its ETR. By design, the deduction for domestic production activities also causes some interindustry variation in those two measures.

Pass-Through Entities

Investments by pass-through entities also must pay competitive rates of return. For debt-financed investments, that return would match the market interest rate. For equity-financed investments, the goal would be to earn as much after taxes on a marginal investment as would come from corporate stock.⁸ Given those earnings requirements and current tax law, the before-tax rate of return required to just break even can be computed in the same way as the before-tax rate of return on a marginal investment in the corporate sector. No tax is imposed directly on the pass-through entity, but the profits are subject to tax at the individual level (at a rate other than u).

The after-tax return received by lenders to pass-through entities is generally not the same as that received by those who lend to C corporations because the funds borrowed by pass-through entities are less likely to be held in non-taxable vehicles.⁹ Because of that difference for lenders, the average, real after-tax return on savings invested in the noncorporate sector need not be the same as that invested in the corporate sector (labeled s in Equation 3). Although the values of tax variables (other than depreciation) differ for pass-through entities and C corporations, the formulas for calculating the tax wedge and ETR are similar.

-
8. According to economic theory, if the risk-adjusted after-tax return on investments in pass-through entities was higher or lower than that on corporate stocks, investors would redirect their investments to the form of equity offering the higher return, raising the price of that investment until the returns reached equilibrium. The same logic applies to owner-occupied housing. ETR calculations are based on having reached such an equilibrium. The calculations ignore differences in risk for investments in C corporations, pass-through entities, and owner-occupied housing.
9. The marginal equity-financed investment in pass-through entities cannot be held in a nontaxable account without incurring a liability for what is called the unrelated business income tax, which applies to not-for-profit entities (mainly charities and retirement accounts) that engage in profitable business activity. That difference from savings supplied to corporations is reflected in the before-tax rate of return that the pass-through entity must earn.

Owner-Occupied Housing

A homeowner who makes a marginal investment in a primary residence using debt financing (typically, a mortgage) must pay the market interest rate. As for equity financing, CBO used the same rates of return required by homeowners for home equity as for other equity investments.¹⁰ The main differences in computing homeowners' and businesses' required before-tax rates of return are that, unlike businesses, homeowners owe no tax on their equity earnings (sometimes called implicit rent), and there is no tax deduction for depreciation of a primary residence, although mortgage interest is deductible for homeowners who itemize. Another difference is that a homeowner's federal income taxes are reduced to the extent that his or her property taxes are deductible. In total, those features require the before-tax rate of return to be only slightly higher (just enough to cover the non-deductible portion of interest) than the return paid to business investors. If the property tax deduction is large enough, the before-tax rate can be lower than that for businesses. The tax wedge, therefore, typically will be much closer to zero than it is for marginal investments in the other two sectors, and it may even be negative.

Data and Key Parameters for Calculating Effective Tax Rates

CBO used a variety of data sources to estimate the distribution of investments by asset type and industry, the distribution of investments by the form of organization (C corporation, pass-through entity, and owner-occupied housing), characteristics of the economic environment (including source of financing, required returns on investment, and the distribution of marginal saving among different tax treatments), and applicable statutory tax rates.

The agency based its estimates of the ETRs in this report on data from 2007. Although more recent data are available, they reflect the temporary effects of the financial crisis and recession that began in 2007. (Appendix B

10. In reality, the rate of return on housing is not necessarily the same as that on business investments. Some of the difference could be attributable to consumer tastes that affect the market for housing differently than that for other types of investment. Nevertheless, this report disregards any concern with housing other than as an investment.

discusses CBO's calculations using data from 2009 to illustrate those effects.)

Investments

CBO considered investments in 55 asset types held by 54 industries to represent the full range of equipment, inventories, land, software, and structures that make up the private tangible capital stock in the United States.¹¹ For a variety of reasons discussed below, intangible assets, which first were reported by the Bureau of Economic Analysis (BEA) in 2013, were excluded from this analysis. Residential buildings constitute the largest asset category, accounting for 40 percent of the total value of the capital stock in 2007 (see Table A-1). Land was next, at 27 percent, followed by structures other than residential buildings, at 18 percent, and equipment and software, at 10 percent. Inventories accounted for 4 percent. Each of the 2,970 combinations of asset types and industries was assigned a rate of economic depreciation on the basis of BEA's estimates.¹²

CBO calculated ETRs for each of the 2,970 asset-type-and-industry cells and for land and structures of owner-occupied housing. The overall ETR and the ETRs by asset type and industry were constructed by averaging values of ρ (real before-tax return) and s (real after-tax return to investors) within a category. For example, to calculate the ETR for the retail trade industry, the values of ρ and s for each asset type used in that industry were multiplied by that asset type's percentage share of the total capital stock. The averaged values of ρ and s were then used to calculate the ETR for the industry. (The same procedure was used to calculate ETRs for asset types, except that the weights were determined by each industry's share of the capital stock.)

11. CBO used data available online in September 2011 from BEA and in March 2012 from the Bureau of Labor Statistics. For current data on most categories of capital stock, see Bureau of Economic Analysis, "Detailed Data for Fixed Assets and Consumer Durable Goods" (updated September 2, 2010), <http://go.usa.gov/F7E9>. Figures pertaining to land are available from Bureau of Labor Statistics, "Multifactor Productivity: Capital Asset Type for Major Sectors" (August 21, 2014), www.bls.gov/mfp/mprdownload.htm.

12. See Bureau of Economic Analysis, "BEA Depreciation Estimates" (accessed December 16, 2014), http://www.bea.gov/iTable/index_FA.cfm.

Table A-1.**Distribution of Assets in 2007, by Category and Form of Organization**

Percentage of Total, All Categories

	C Corporations	Pass-Through Entities	Owner-Occupied Housing	Total
All Equipment and Software	7.9	2.4	n.a.	10.4
Computers and software	0.4	0.1	n.a.	0.5
Instruments and communications equipment	1.4	0.3	n.a.	1.8
Office and residential equipment and furniture	0.5	0.3	n.a.	0.8
Transportation equipment	1.4	0.5	n.a.	1.9
Industrial machinery	1.0	0.2	n.a.	1.2
Other industrial equipment	2.1	0.3	n.a.	2.5
Other equipment	1.0	0.7	n.a.	1.7
All Structures	15.3	10.5	33.0	58.7
Residential buildings	0.9	6.6	33.0	40.4
Nonresidential buildings	9.1	3.6	n.a.	12.7
Mining and drilling structures	0.3	*	n.a.	0.4
Other structures	5.1	0.2	n.a.	5.3
Inventories	3.0	1.4	n.a.	4.4
Land	5.8	6.0	14.6	26.5
All Asset Categories	32.0	20.3	47.6	100.0

Source: Congressional Budget Office based on data from the Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; and Internal Revenue Service, Statistics of Income Division.

Note: n.a. = not applicable; * = between zero and 0.1 percent.

Producers

Investments were distributed among C corporations, pass-through entities, and homeowners. Marginal investments were allocated among different types of investors in proportion to their ownership of existing assets.

In 2007, C corporations accounted for just under 80 percent of the existing stock of equipment and non-residential structures and about 70 percent of inventories (see Table A-1).¹³ Their share of residential buildings, in contrast, was just 2 percent; pass-through entities accounted for 16 percent of residential buildings, and homeowners accounted for 82 percent. Land was more evenly divided, with C corporations and pass-through entities holding over 20 percent each and homeowners holding a bit more than half.

By industry, pass-through entities held more than half of the assets in agriculture, construction, truck transportation, administrative and support services, offices of health practitioners, other health care and social assistance services (excluding hospitals, nursing homes, and residential care facilities), arts and entertainment services, and “other services.” C corporations held more than half the assets in all other industries. The assets of nonprofit entities (more than half of which were hospitals) were not included in this report.

Economic Environment

Several parameters are included in the ETR framework to define the economic environment in which the tax system operates: the marginal investment’s source of financing (debt or equity), the disposition of C corporations’ profits (distributed or retained), the period for which investors will hold equities before selling them, and the investment’s rate of return. Although those parameters might respond to the structure of the tax system, CBO estimated all of them under current law only and used the same values for every option.

13. Ownership by form of business organization was estimated on the basis of data obtained from the Bureau of Economic Analysis and the Internal Revenue Service.

Table A-2.
Rate-of-Return Parameters

	Percent
Inflation Rate (π) ^a	2.4
Real Equity Return After Corporate Tax (E)	5.8
Baa Corporate Bond Rate (i)	6.8

Source: Congressional Budget Office.

a. Measured by the price index for all urban consumers.

The use of equity or debt for financing varies by the form of organization. C corporations fund slightly more of their investments with debt than do pass-through entities, partly because they have broader access to credit, specifically through the bond market. Federal policies beyond the tax code (such as the implicit guarantees of Fannie Mae and Freddie Mac) have historically given prospective homeowners relatively easy access to credit as well. In this analysis, CBO estimates that C corporations financed 32 percent of their assets through debt, compared with 29 percent for pass-through entities and 43 percent for homeowners.¹⁴ Although companies in certain industries are more likely to use debt financing than are those in other industries, CBO did not vary rates by industry.

Interest rates, rates of inflation, and returns paid by C corporations on equity were set to be consistent with recent trends and with CBO's macroeconomic forecast for 2020 to 2024 (see Table A-2).¹⁵ The real return on equity was estimated at 5.8 percent, calculated as the nominal interest rate on 10-year Treasury notes (4.7 percent) plus a risk premium (3.5 percent) minus the rate of inflation (2.4 percent). The interest rate on debt used was that on corporate securities rated Baa, which is higher than the rate on Treasury securities because businesses and homeowners typically have a higher risk of default than the government does. In CBO's judgment, those

rates are a reasonable approximation of the "break-even" rate that would be just enough to induce an investment. Actual investments, of course, involve some risk and therefore realize returns both greater than and less than the break-even rate. The tax implications of those higher or lower returns may be different from the implications of the break-even rate—particularly in the case of negative returns which, under current law, cannot generate negative tax liability. CBO did not account for that asymmetrical treatment.

Marginal Tax Rates

CBO estimated marginal tax rates on the basis of the tax law in effect during 2014, thus excluding a provision that expired after 2013 that had allowed businesses to expense 50 percent of most equipment. Specifically, CBO applied close approximations of the 2014 tax rates and rules regarding depreciation, inventory accounting, and domestic production activities.¹⁶

In keeping with the approach taken in other studies, CBO used the top statutory rate of 35 percent as the marginal tax rate on all corporate profits. At the individual level, the return on saving was first divided among three categories: nontaxable (for example, in individual retirement accounts and employment-based retirement plans), temporarily deferred (in nonqualified annuities and whole-life insurance), and fully taxable. CBO assigned marginal saving to each in proportion to the distribution of assets in 2007, taking into account statutory limits on contributions to nontaxable accounts that would preclude marginal saving in those accounts (see Table A-3). The assets of C corporations were the least likely to be held in taxable accounts, largely because C corporations' stocks and bonds are traded publicly and thus are easily accumulated in retirement accounts. In general, the equity in pass-through entities and owner-occupied housing cannot be held in nontaxable or temporarily deferred accounts.

14. The percentages of assets with debt financing are averages calculated over two high-to-low cycles. For C corporations and pass-through entities, those cycles encompassed the years 1999 through 2008. For owner-occupied housing, the two cycles ran from 1989 through 2009. The percentages were derived from the Federal Reserve Board's quarterly flow of funds accounts.

15. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2014 to 2024* (August 2014), www.cbo.gov/publication/45653.

16. As this report was going into production, the Congress had cleared the Tax Increase Prevention Act of 2014 (H.R. 5771), which would extend the expensing provision retroactively to 2014, but the President had not yet signed the bill. From 2015 on, businesses will still be permitted to expense some equipment—with deductible amounts capped at \$25,000—under Section 179 of the tax code. Under CBO's methodology, such expensing would have no effect on the marginal investment.

Table A-3.**Distribution of Assets, by Tax Status**

	Percent
Equity in C Corporations	
Nontaxable	38.9
Temporarily deferred	3.9
Fully taxable	57.2
C Corporation Debt	
Nontaxable	32.8
Temporarily deferred	14.9
Fully taxable	52.3
Pass-Through Entity Debt	
Nontaxable	13.6
Temporarily deferred	10.1
Fully taxable	76.3
Homeowner Debt	
Nontaxable	18.3
Temporarily deferred	3.7
Fully taxable	77.9

Source: Congressional Budget Office based on 2007 data from Federal Reserve Board, Flow of Funds Accounts (March 8, 2012), www.federalreserve.gov/releases/z1/20120308.

Capital gains in the “fully taxable” category were further distributed among three groups: those realized within one year of acquisition (short-term capital gains, 3.4 percent of the total), those realized more than one year after acquisition (long-term capital gains, 49.6 percent), and those held until the asset owner’s death (46.9 percent).¹⁷ Capital gains in the third group are untaxed because the acquisition cost (or basis) is automatically reset to the market value upon the death of the owner. Long-term capital gains and all income in the “temporarily deferred” category were assigned an average holding period of just under nine years, at which point they would be taxed at the appropriate rate.

The individual income tax rate on a particular type of capital income held in a fully taxable account was set at the average of the marginal tax rates faced by taxpayers with positive amounts of that particular type of capital income and positive taxable income overall (see

17. CBO derived those percentages from data for 2007 and 2009. See Internal Revenue Service, “SOI Tax Stats—Sales of Capital Assets Reported on Individual Tax Returns, Short-Term and Long-Term Capital Asset Transactions, Classified by Asset Type and Length of Time Held” (August 22, 2014), <http://go.usa.gov/ynek>.

Table A-4). For example, recipients of interest with positive taxable income paid, on average, a tax rate of 27.4 percent on additional interest. That rate is below the top statutory rate of 43.4 percent because many recipients were in lower tax brackets.

Omitting Intangible Assets From Estimates of Effective Tax Rates

Intangible assets consist of everything that accounts for the difference between the value of the tangible assets a business owns—its structures, equipment, land, and inventories—and its total market value. Intangible assets include computer software, product prototypes, book manuscripts, patents and copyrights, brand names, customer lists, a trained workforce, and established business practices, for example. Other than prepackaged and bundled software, no intangible assets were considered as part of the analysis the CBO undertook for this report. (Prepackaged software was included because it is depreciated for tax purposes as though it was a tangible asset, and its value is reported by BEA alongside the values of tangible assets. Bundled software is included in the value of the devices with which it is sold.)

Table A-4.**Average Marginal Tax Rates Under 2014 Law, by Source of Income**

	Percent
Corporate Profits (<i>u</i>)	35.0
Dividends	18.4
Long-Term Capital Gains ^a	21.2
Short-Term Capital Gains ^a	32.3
Interest Income	27.4
Pass-Through Business Profits	33.1
Distributions From Nonqualified Annuities	21.5
Mortgage Interest and Property Tax Deductions ^b	18.1

Source: Congressional Budget Office based on the 2006 Statistics of Income Public Use File.

Note: Permanent features of the 2014 law only; provisions that are scheduled to expire have been excluded.

- The short-term rate is applied to 3.4 percent of total gains. The long-term rate is applied to 49.6 percent of gains. A rate of zero is applied to the remaining 46.9 percent of gains, which represents the share held until the taxpayer’s death.
- The rate is applied only to amounts paid by itemizers, who are estimated to account for 90 percent of mortgage interest paid and 72 percent of residential property taxes paid.

Until recently, all published ETR estimates for income from selected intangible assets have been small relative to ETRs for other types of assets, in some cases amounting roughly to zero. Hence, the figures in this report are higher than they would have been had intangible assets been included.¹⁸

In general, published estimates of ETRs on income from intangible assets do not account for all intangible assets and—other than software and research and development—there is no consensus about what subset of intangible assets would be included in such analyses. Some estimates include advertising, at least one includes company-specific resources arising from employee training, and another one accounts for the value of original renditions of entertainment, literary, or artistic works (such as films, books, and music). Thus, it is difficult to assess how much lower the overall ETR would be if intangible assets were included. The only published figures with and without certain intangible assets show the overall ETR, including intangible assets, as 0.9 percentage points lower than the ETR without those assets (for C corporations separately, the difference was 2.3 percentage points).¹⁹ That figure, however, underestimates the effect that including intangible assets in the analysis

would have had because it accounts only for expenses for advertising and for research and development.

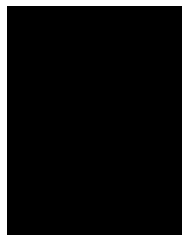
Rather than identify a subset of intangible assets, CBO excluded all such assets that the tax code treats differently from tangible assets, for two reasons in particular:

- Data on the value of intangible assets (other than software) have generally been less available than data concerning tangible assets. BEA recently expanded its definition of fixed assets to include original renditions of entertainment, literary, and artistic works and assets that arise from research and development. The value of intangible assets arising from advertising and employee training, however, was not included by BEA. Because those assets are difficult to measure, their value is considered highly uncertain. At least a portion of the difference between the market value of a company and the value of its tangible assets cannot be linked directly to any identifiable investment.
- The concept of the marginal investment is less applicable to intangible than to tangible assets. Investments in advertising and research typically are not intended to realize a break-even (or normal) rate of return. Rather, their object is to establish market dominance that leads to returns that are significantly greater than those attributable to marginal investments in tangible assets. However, compared with investments in tangible assets, it is more likely that an investment in an intangible asset will not generate any return at all. That would be the case, for example, for the intangible assets used by a pharmaceutical company in developing a drug that never gains federal approval. Some researchers suggest that an “average effective tax rate”—derived by applying the standard ETR to normal returns and the statutory tax rate to higher-than-normal returns—would provide a more appropriate measure for comparing tax systems when higher-than-normal rates of return are expected.²⁰

18. An ETR of –4.7 percent (using 2003 data) on income from intangible assets arising from advertising, research and development, and human capital investment is reported in Jane G. Gravelle, *International Corporate Tax Rate Comparisons and Policy Implications*, Report for Congress R41743 (Congressional Research Service, December 2012). See also Department of the Treasury, *The President’s Framework for Business Tax Reform* (February 2012), <http://go.usa.gov/ED8e>, which reports ETRs of 6.2 percent for C corporations and –3.1 percent for pass-through entities on income from intangible assets arising from research and development; and James B. Mackie III, “Unfinished Business of the 1986 Tax Reform Act: An Effective Tax Rate Analysis of Current Issues in the Taxation of Capital Income,” *National Tax Journal*, vol. 55, no. 2 (June 2002), pp. 293–337, <http://tinyurl.com/qh8t68c> (PDF, 175 KB), which reports an ETR of 4.4 percent (using 1996 data) on income from intangible assets arising from advertising and research and development. The Treasury released a table in August 2014 that reports a rate of 22.2 percent on intangible assets arising from research and development, advertising, and investment in artistic originals. Although much higher than past estimates, that result still implies that CBO’s estimates of ETRs would be lower if intangible assets were included. See Department of the Treasury, Office of Tax Analysis, *Analyses and Estimates of Current and Proposed Tax Law, “Effective Marginal Tax Rates on New Investment: Current Year Estimates”* (August 20, 2014), <http://go.usa.gov/sZSz>.

19. See James B. Mackie III, “Unfinished Business of the 1986 Tax Reform Act: An Effective Tax Rate Analysis of Current Issues in the Taxation of Capital Income,” *National Tax Journal*, vol. 55, no. 2 (June 2002), Table 3, <http://tinyurl.com/qh8t68c> (PDF, 175 KB).

20. Jane G. Gravelle, *International Corporate Tax Rate Comparisons and Policy Implications*, Report for Congress R41743 (Congressional Research Service, December 2012).



Appendix B: The Sensitivity of Estimates of Effective Tax Rates to Certain Analytical Choices

The estimates of effective marginal tax rates (hereafter referred to as effective tax rates or ETRs) developed by the Congressional Budget Office (CBO) for this report are particularly sensitive to a set of analytical choices that were incorporated into CBO's methodology:

- The taxes paid to the Old-Age, Survivors, and Disability Insurance (OASDI) and Hospital Insurance (HI) Trust Funds under the Self-Employment Contributions Act (SECA) are strictly taxes on labor that do not affect the rate of return on capital;
 - Data from 2007 are more appropriate for use in a forward-looking analysis than are data from later years, which reflect the effects of the financial crisis and recession after 2007;
 - The source of equity financing—whether a corporation issues new shares or reinvests retained earnings—affects ETRs somewhat differently and investment is funded by a mix of both sources;
 - Land can be considered part of a marginal investment; and
 - Risk premiums associated with debt- and equity-financed investments are reflected in their rates of return, which can be another factor differentiating the ETRs on those two types of investment in addition to their different treatment under tax law.
- Recognizing a portion of the SECA tax as a tax on capital;
 - Using data that reflected the financial crisis and recession;
 - Assuming that a higher share of C corporation investment is funded by new shares; and
 - Disregarding land as a marginal investment.

By contrast, disregarding risk premiums in the rates of return would have resulted in a lower overall estimated ETR.

Those effects on the overall ETR do not necessarily carry through to each form of organization or source of financing; in many cases, the alternative analytical choices would have had different effects on estimated ETRs for different forms of organization and sources of financing. The only choice that significantly changed the ordering of industries by estimated ETR was the one concerning land; no test significantly changed the ordering of asset types by estimated ETR.

The Incidence of the SECA Tax

To date, studies of effective tax rates on capital, including this one and a report CBO published in 2005, have treated the SECA tax as a tax on labor.¹ However, CBO has also reported that more than 40 percent of the SECA

CBO examined the sensitivity of the ETR estimates to each of those analytical choices and concluded that the following choices would have resulted in a higher overall estimated ETR:

1. Congressional Budget Office, *Taxing Capital Income: Effective Rates and Approaches to Reform* (October 2005), www.cbo.gov/publication/17393.

tax base represents income from capital (much of it intangible, such as a business's reputation).² Had CBO applied that finding to its current analysis, the estimated ETRs on pass-through entities, businesses as a whole, and overall capital income would have been slightly higher, and the differences between the ETRs of C corporations and pass-through entities would have been slightly smaller.

The SECA tax applies only to certain types of pass-through entities—sole proprietorships, partnerships, and limited liability companies. Rental income and the profits of S corporations are not taxed under SECA; rental income is excluded because passive income is exempted from payroll taxes, and S corporations' income is excluded because the owners of those businesses are paid wages that are subject to the Federal Insurance Contributions Act tax, the tax through which employers and employees contribute to the OASDI and HI trust funds. In the sensitivity analysis, CBO calculated separate average marginal tax rates for entities taxed under SECA and for those that are not subject to SECA, and then combined them, weighting the rates according to the amount of each type of income.

In calculating the marginal tax rate on capital under SECA, CBO first added to the tax base the portion of the SECA tax that is derived from labor and then added the portion derived from capital. For the OASDI tax, that ordering is critical to calculating the marginal tax rate on capital income. The OASDI tax base in 2007 was capped at \$97,500; income above that threshold was not taxed. Thus, for example, the marginal OASDI tax rate for non-farm sole proprietors was, on average, 6.3 percent—the average of 12.4 percent (the statutory rate below the threshold) and zero, weighted by the amount of capital income of taxpayers who were above or below the threshold. For nonpassive partners, the rate was 2.1 percent because more capital income from partnerships falls above the threshold. For the HI tax, which applies to all earnings, the ordering of labor and capital income is of no importance—either way, the marginal tax rate in 2007 was 2.9 percent (the flat statutory rate).

When the SECA tax is taken into account, the marginal income tax rate on pass-through income is affected as well. Because sole proprietors and partners are permitted

to deduct half of their SECA tax liability from their adjusted gross income, the marginal income tax rate on their pass-through income also declines. (S corporation owners and passive landlords, to whom the marginal rate on pass-through income applies, cannot claim that deduction because they do not pay SECA taxes.) Accounting for both the SECA tax and that deduction boosts the sum of the marginal tax rate on pass-through income, on average, by more than 2 percentage points.

The increase in ETRs on pass-through investments, however, is smaller than is the increase in marginal tax rates because the implications of SECA taxes are quite different for equity- and debt-financed investments. For equity-financed investments, a higher marginal tax rate translates to an ETR that is higher by a similar magnitude. For debt-financed investments, however, the higher marginal rates increase the value of depreciation and (in the presence of inflation) interest deductions, thereby lowering the ETR. For pass-through entities in general, accounting for the SECA tax increased the ETR by 1.5 percentage points (see Table B-1). The SECA tax has no impact on the ETRs for C corporations and owner-occupied housing. Hence, the changes in the overall ETR and the ETR for all businesses are smaller than the change in the ETR for pass-through entities.

Data From the Financial Crisis and Recession

Even though more recent data were available, the analysis presented in this report was based on data from 2007. The more recent data reflected the financial crisis of 2008 and the ensuing recession. Because ETRs are supposed to be forward-looking—to reflect projections of the economic and tax environment over the lifetime of an asset—the 2007 data would seem to provide a better forecast of those conditions for 2014 than would data from 2008 or 2009.

To identify the effects of its decision to use 2007 data, CBO also estimated ETRs on the basis of 2009 data. Two changes in the economy during the period immediately preceding 2009 produced large effects on the agency's calculations of effective tax rates:

- The value of residential real estate declined substantially, and, as a result, the shares of assets that were attributable to owner-occupied housing dropped from 48 percent in 2007 to 42 percent in 2009.

2. Congressional Budget Office, *The Taxation of Capital and Labor Through the Self-Employment Tax* (September 2012), www.cbo.gov/publication/43644.

Table B-1.**Effective Tax Rates With and Without the SECA Tax**

	Base Case: Without SECA Tax ^a (Percent)	With SECA Tax (Percent)	Difference (Percentage points)
Overall	17.8	18.2	0.4
Business	29.3	29.9	0.5
Pass-through entities	26.8	28.3	1.5
Equity financed	30.2	32.3	2.1
Debt financed	8.4	5.1	-3.3

Source: Congressional Budget Office.

Note: SECA = Self-Employment Contributions Act.

a. The base case represents the permanent features of 2014 law; provisions that are scheduled to expire have been excluded.

Because owner-occupied housing has a very low ETR in both years, the reweighting in favor of business assets increased the overall ETR.

- Average incomes declined, and, given the graduated structure of the individual income tax, the reductions pulled some taxpayers into lower tax brackets, thus lowering the ETRs for all three forms of organization under study: C corporations, pass-through entities, and owner-occupied housing.

Data from 2009 also were used to reestimate the share of financial assets held in tax-favored retirement plans. CBO found that the share of corporate equities held in retirement plans was smaller in 2009 than in 2007. By contrast, the shares of debt instruments for all organizational forms that were held in retirement plans were larger in 2009 than in 2007. No data were available at the time of the analysis to recalculate the split between corporate and noncorporate assets in 2009, but the change in that split, and its consequent effect on ETRs, probably was small. CBO did not consider any influence the recession might have had on the split between debt and equity financing. Instead, to maintain a forward-looking measure, CBO calculated the average split over two high-to-low cycles in equity values (1999 through 2008) and used that value for 2007 and 2009 (see Appendix C).

On balance, the effect of the smaller share of assets attributable to owner-occupied housing outweighed the effect of taxpayers' falling into lower tax brackets (see Table B-2). The overall ETR derived from 2009 data is 18.2 percent—0.4 percentage points higher than the

ETR derived from 2007 data. Because more taxpayers fell into lower tax brackets and larger shares of debt were held in retirement accounts, however, the ETRs for C corporations and pass-through entities, when calculated from 2009 data, are lower by roughly a percentage point than are the ETRs calculated from 2007 data. The ETR for owner-occupied housing declined by a larger percentage because the value of property tax deductions declined as taxpayers slipped into lower tax brackets.

Sources of Equity Financing

Corporations have two distinct sources of equity financing: They can issue new shares, and they can reinvest retained earnings. Each affects ETRs somewhat differently.

If equity comes from new shares, the disposition of profits affects the ETR calculation. If profits are distributed as dividends, the recipient must pay tax on that distribution, increasing the cost of the investment. Reinvested profits, by contrast, do not generate immediate taxable income, but the reinvestment increases the value of existing shares, so a shareholder will realize a taxable capital gain when the shares are sold.

The dividend tax on equity from retained earnings works somewhat differently. By retaining earnings, the firm effectively defers the taxation of dividends from previous investments. The return on a new investment funded with those retained earnings accrues tax-free until the company chooses to distribute the earnings as dividends. At that time, the value of the dividends (and the tax due on them) will be higher than if the earnings had been

Table B-2.**Effective Tax Rates Reflecting Conditions Immediately Before and After the Economic Events of 2008**

	Base Case: Reflecting Economic Conditions in 2007 ^a	Reflecting Economic Conditions in 2009 (Percent)	Difference (Percentage points)
Overall	17.8	18.2	0.4
Business	29.3	28.4	-0.9
C corporations	30.8	29.8	-1.0
Pass-through entities	26.8	25.8	-1.0
Owner-Occupied Housing	-1.8	-3.2	-1.4

Source: Congressional Budget Office.

a. The base case represents the permanent features of 2014 law; provisions that are scheduled to expire have been excluded.

distributed in the first place. But in terms of present value, the tax on dividends is the same in either case (assuming that tax rates do not change over time).³ Therefore, funding an investment with retained earnings and paying dividends from the resulting profits does not alter the tax on dividends relative to the amount that would be due if the dividends were paid immediately.⁴

At least two pieces of information are needed before an estimate can be made of the share of equity-financed investment for which dividend taxes matter: the share of profits paid out as dividends, and the share of equity-financed investment funded with new shares. CBO used data from the Bureau of Economic Analysis on dividends and corporate profits (adjusted to exclude S corporations) to generate an average dividend payout rate of 44 percent for C corporations from 2002 to 2010. Data on new-share issuances for that period indicate that 32 percent of equity financing came from new shares, which implies that dividend taxes matter for 14 percent (0.44×0.32) of equity-financed investments. However, when new shares and retained earnings are combined to pay for an investment, the marginal dollar of investment would come from new shares, and the business would treat the entire investment as though dividend taxes matter. To account

for that, CBO adjusted the percentage upward from 14 percent to 20 percent and used that value as its base case. To test sensitivity, CBO used values of zero (which would apply if all equity-financed investment came from retained earnings) and 40 percent (a reasonable approximation of the value if all equity-financed investment came from new shares).

Under the base case, which represents the permanent features of 2014 law alone, the ETR on income from equity-financed investment by C corporations was 37.5 percent (see Table B-3). However, for a particular investment financed from retained earnings, the ETR would be 36.6 percent; for one financed with new shares, it would be 38.4 percent.

The source of equity financing would seem to be relevant to two of the eight options presented in the main text. Option 2 would eliminate the individual-level taxes on dividends and capital gains. Because dividends are not taxed under that option, however, the source of the marginal dollar of equity financing is actually irrelevant, and the ETR on equity-financed investment would be 31.6 percent whether the investment was funded with new shares or retained earnings. Under Option 4, which would tax dividends and capital gains as ordinary income, the ETR on equity-financed investments of C corporations would be 41.7 percent. However, in contrast to Option 2, under Option 4, the source of the marginal dollar of equity financing is relevant. For investment funded out of new shares, the ETR would be 43.2 percent; for that funded out of retained earnings, it would be 40.2 percent.

3. Present value is a single number that expresses a flow of current and future income, or payments, in terms of a lump sum received, or paid, today.

4. The irrelevance of dividend taxes when investment is funded with retained earnings is known as the new view of dividend taxation. For a more detailed explanation, see Alan Auerbach, "Taxation, Corporate Financial Policy and the Cost of Capital," *Journal of Economic Literature*, vol. 21, no. 3 (September 1983), pp. 924–926.

Table B-3.**Effective Tax Rates Under Different Assumptions About the Application of Dividend Taxes**

	Base Case: Dividend Tax Applies to 20 Percent of Equity-Financed Investment (Percent)	Dividend Tax Applies to 40 Percent of Equity-Financed Investment (Percent)	Difference From Base Case (Percentage points)	Dividend Tax Does Not Apply to Any Equity-Financed Investment (Percent)	Difference From Base Case (Percentage points)
2014 Law^a					
Overall	17.8	18.2	0.3	17.5	-0.3
Business	29.3	29.8	0.5	28.8	-0.5
C corporations	30.8	31.5	0.7	30.0	-0.8
Equity financed	37.5	38.4	0.9	36.6	-0.9
Debt financed	-5.8	-5.8	0	-5.8	0
Eliminate Individual-Level Taxes on Dividends and Capital Gains From the Sale of C Corporation Stock					
Overall	15.7	15.7	0	15.7	0
Business	26.2	26.2	0	26.2	0
C corporations	25.8	25.8	0	25.8	0
Equity financed	31.6	31.6	0	31.6	0
Debt financed	-5.8	-5.8	0	-5.8	0
Tax Dividends and Long-Term Capital Gains From the Sale of C Corporation Stock as Ordinary Income					
Overall	19.5	20.1	0.6	18.9	-0.6
Business	31.6	32.5	0.8	30.8	-0.9
C corporations	34.4	35.7	1.3	33.1	-1.3
Equity financed	41.7	43.2	1.5	40.2	-1.5
Debt financed	-5.8	-5.8	0	-5.8	0

Source: Congressional Budget Office.

a. Permanent features of 2014 law only; provisions that are scheduled to expire have been excluded.

Land as a Marginal Investment

In general, CBO interpreted a marginal investment to be one that creates new assets—the purchase of existing equipment or structures was not considered. Although the literal creation of new land is unlikely, the ownership of land nevertheless is ordinarily a prerequisite to investment in new buildings and land improvements. Furthermore, ownership of land has tax consequences that are independent of those that affect buildings or improvements. Because the acquisition of land often is a necessary component of investment in new buildings and other improvements, CBO chose to include it in its ETR calculations.

To test sensitivity, CBO calculated ETRs without land holdings. Because the ETR on land was higher than average for business investment, excluding it from the calculation would lower the ETR on the income of C corporations and pass-through entities (see Table B-4). The effect would be most pronounced in the real estate and agriculture industries. In the case of owner-occupied housing, land and structures are taxed the same way (that is, neither is depreciated), so excluding land would have no effect on the ETR. However, land makes up a larger share of owner-occupied housing assets than it does of business assets so the near-zero ETR on owner-occupied housing gets less weight in the calculation without land than it does in the base-case calculation. That result is an overall ETR without land of 18.0 percent—slightly higher than the base-case ETR of 17.8 percent.

Table B-4.**Effective Tax Rates With and Without Land**

Percent	Base Case: With Land ^a (Percent)	Without Land (Percent)	Difference (Percentage points)
Overall	17.8	18.0	0.2
Business	29.3	28.5	-0.8
C corporations	30.8	30.0	-0.8
Pass-through entities	26.8	25.5	-1.3
Owner-occupied housing	-1.8	-1.8	0

Source: Congressional Budget Office.

a. The base case represents the permanent features of 2014 law; provisions that are scheduled to expire have been excluded.

Risk Premiums

In CBO's view, investors consider a risk premium when choosing among investment opportunities, the cost of capital is affected by such a premium, and the risk premium is therefore accounted for in the agency's calculation of ETRs. The existence of a risk premium implies actual risk, however; that is, that an investment might yield rates of return anywhere within a range; moreover, different outcomes might have different tax consequences, particularly if the return is negative. CBO did not simulate that asymmetry; it used an average rate of return and calculated ETRs as though that return was realized in every case.

There are two ways to test the implications of including a risk premium without also accounting for the asymmetrical tax treatment of different rates of return. The more complicated alternative is to simulate the asymmetrical tax treatment; the simpler alternative—used in some other studies—is to remove the risk premium from the rate of return. CBO pursued the second approach by calculating ETRs using the interest rate on 10-year Treasury

notes, a relatively risk-free investment, as the rate of return on debt- and equity-financed investments.

When the before-tax rate of return dropped more than the after-tax rate of return under those conditions, the ETR increased (see Appendix A). That result occurs for equity-financed investments of C corporations and pass-through entities and for debt-financed investments in the asset types that are subject to the least favorable tax depreciation. However, when the before-tax rate of return dropped *less* than the after-tax rate of return under those conditions, the ETR decreased. That result occurs for debt-financed investments in the asset types with the most favorable tax depreciation treatment. Considering all business investment, the ETR without the risk premium would be 30.9 percent, or 1.6 percentage points higher than the base case (see Table B-5). For owner-occupied housing, however, the ETR would be -6.8 percent, or 5.0 percentage points lower than the base case. Overall, the ETR without the risk premium would be 17.6 percent, just slightly lower than the base-case ETR of 17.8 percent.

Table B-5.**Effective Tax Rates With and Without a Risk Premium**

	Base Case: With Risk Premium ^a (Percent)	Without Risk Premium (Percent)	Difference (Percentage points)
Overall	17.8	17.6	-0.2
Business	29.3	30.9	1.6
C corporations	30.8	33.2	2.4
Equity financed	37.5	43.0	5.5
Debt financed	-5.8	-23.2	-17.4
Pass-through entities	26.8	26.9	0.1
Equity financed	30.2	32.1	1.9
Debt financed	8.4	-1.6	-10.0
Owner-Occupied Housing	-1.8	-6.8	-5.0
Equity financed	-3.1	-8.7	-5.6
Debt financed	1.3	-3.0	-4.3

Source: Congressional Budget Office.

a. The base case represents the permanent features of 2014 law only; provisions that are scheduled to expire have been excluded.



Appendix C: Changes in CBO's Estimates of Effective Tax Rates Since 2005

In a 2005 report, *Taxing Capital Income: Effective Rates and Approaches to Reform*, the Congressional Budget Office (CBO) reported an overall effective marginal tax rate (hereafter referred to as an effective tax rate or ETR) of 13.8 percent that the agency had estimated from data for 2002.¹ CBO now estimates an overall ETR of 17.8 percent on the basis of its analysis using tax data from 2007. The difference between the two numbers is attributable to three basic factors:

- Tax law has been changed since 2005;
- The economy changed between 2002 and 2007; and
- CBO has made technical changes to its methodology for estimating effective tax rates.

Changes in Tax Law

Three changes that have taken effect in tax law since 2005 have been incorporated into this report's calculations: the 2006 introduction of the deduction for domestic production activities, the 3.8 percent tax on unearned income (including interest, dividends, and capital gains) imposed under the Affordable Care Act, and the higher tax rates enacted under the American Taxpayer Relief Act of 2012. The first change reduced the overall ETR by 0.2 percentage points, but the other two, both of which took effect in 2013, provided for higher rates that increased the overall ETR by 1.1 percentage points. The combined result of those legislative changes was an overall increase of 0.9 percentage points (see Table C-1).

1. Congressional Budget Office, *Taxing Capital Income: Effective Rates and Approaches to Reform* (October 2005), www.cbo.gov/publication/17393.

Changes in the Economy

For ETRs, the growth in real (inflation-adjusted) income was the most important change in the economy for the 2002–2007 period. Average taxable income increased by 6.5 percent per year over that period, but the rate of inflation was just 2.9 percent. Because tax brackets are indexed for inflation, income growth in excess of inflation pushed many taxpayers into higher tax brackets. The resulting increase in marginal tax rates boosted the overall ETR by 2.3 percentage points.

Between 2002 and 2007, the distribution of assets shifted somewhat among asset types, industries, and forms of organization. The most significant shifts were in the increased share of assets held by the mining industry and by pass-through entities. As a result, the overall ETR is 1.3 percentage points lower than it would have been if the mix of assets had remained unchanged.

Also changing between 2002 and 2007 were the shares of assets held in various kinds of retirement accounts, inflation, interest rates, and the return on equities. Together, those changes resulted in an ETR that is 0.7 percentage points higher than 2002 values would imply. All told, economic shifts combined to increase the ETR by 1.7 percentage points.

Technical Changes in CBO's Estimates

The ETR calculations for this report differed from those that CBO reported in 2005 because they use a different measure of the split between debt and equity financing, they treat software differently, and they incorporate a few other technical changes. All in all, technical changes increased the rate by 1.4 percentage points.

Table C-1.**Changes in CBO's Estimates of Effective Tax Rates Since 2005**

Estimated by CBO in 2005 ^a (Percent)	13.8
Changes to the Estimate (Percentage points)	
Legislative changes	
Domestic production activities deduction	-0.2
ACA surtax and ATRA tax rates	<u>1.1</u>
Total Legislative Changes	0.9
Economic changes	
Real bracket creep ^b	2.3
Change in asset mix	-1.3
Other economic changes	<u>0.7</u>
Total Economic Changes	1.7
Technical changes	
Different measure of debt-to-equity split	1.5
Different treatment of software	0.8
Other technical changes	<u>-0.9</u>
Total Technical Changes	1.4
Estimated by CBO for the Current Report ^c (Percent)	17.8

Source: Congressional Budget Office.

Note: ACA = Affordable Care Act; ATRA = American Taxpayer Relief Act of 2012.

- a. CBO's 2005 analysis anticipated that tax law scheduled to take effect in 2008 would do so and would be extended permanently. See Congressional Budget Office, *Taxing Capital Income: Effective Rates and Approaches to Reform* (October 2005), www.cbo.gov/publication/17393.
- b. Real bracket creep occurs when growth in people's inflation-adjusted income pushes more of that income into higher marginal tax brackets.
- c. CBO's estimates accounted for permanent features of 2014 tax law.

Measure of Debt-to-Equity Split

In 2002, CBO estimated the split between debt- and equity-financed investments for each form of organization using data for that year only. As it happened, however, 2002 was an anomalous year for corporations—41 percent of their asset financing came from debt, a much higher percentage than in any other year from 1999 through 2007. (That percentage increased again during the recent recession.) A similar calculation, using 2007 data only, reduced the debt-financed portion to about 34 percent.

However, the ETR should reflect taxpayers' expectations of the economy in the future instead of presenting a historical percentage that is volatile over time. Therefore, for its current analysis, CBO identified a period with two peaks in the value of corporate equities (1999 and 2007) and two valleys (2002 and 2008) over which to average the share financed by debt. The result was a value of 32 percent for the share of financing derived from debt, roughly 9 percentage points lower than the 2002 value. Because the ETR is much lower for debt-financed investments than for equity-financed investments, reducing the debt-financed share further increased the overall ETR. CBO made similar changes to the debt-and-equity splits for pass-through entities and for owner-occupied housing, although the effects were much smaller. Using debt shares averaged over a period of several years resulted in an overall ETR that was 1.5 percentage points higher than the ETR derived from the debt shares from 2002 alone.

Treatment of Software

The Bureau of Economic Analysis (BEA) now disaggregates asset types more finely than it had previously, with a resulting greater precision in the assignment of tax depreciation methods and economic depreciation rates. In 2002, BEA's distribution of tangible assets among asset types and industries reported no distinction among different types of software. Thus, in its analysis of 2002 data, CBO treated all software as prepackaged and depreciated it over a three-year period. By 2007, however, BEA had split software into three types: prepackaged, custom, and "own-account" (that is, developed in-house). Own-account and most custom software are expensed, and some of their development costs are eligible for the research and experimentation tax credit.² That makes those types of software similar to other intangible assets that CBO excluded from its calculations (which also excluded the credit for research and experimentation); CBO excluded own-account and custom software from its analysis of 2007 data.³

2. Custom software must be amortized over a 15-year period if it is included in the acquisition of another business.

3. Most assets classified under petroleum and natural gas structures and mining structures actually represent intangible assets associated with exploration and mine development. To maintain consistent treatment of intangible assets in this report, CBO also excluded the portion of assets in those two categories that was deemed to represent the results of exploration and mine development. In the previous report, all assets classified under petroleum and natural gas structures and mining structures were treated as tangible assets.

Dropping own-account and custom software also motivated a change in the economic depreciation rate. In 2002, CBO used a weighted average for the three types of software (after double-weighting prepackaged software), which amounted to 44 percent per year. For this report, CBO used only the rate for prepackaged software—55 percent per year. The exclusion of own-account and custom software combined with the increased economic depreciation rate for prepackaged software yielded a 0.8 percentage-point increase in the overall ETR.

Other Technical Changes

This analysis incorporates several other important changes, which combined to reduce the overall ETR by

0.9 percentage points. Three of the changes are particularly noteworthy. First, the current methodology calculates ETRs by industry, which also requires greater precision in the assignment of depreciation parameters. Second, the current approach incorporates CBO's assessment that dividend taxes do not matter for investments funded with retained earnings, whereas the earlier approach reflected a view that dividend taxes applied to equity-financed investments in proportion to the rate at which profits were distributed as dividends. Third, the current method changes the way average marginal income tax rates are estimated for the profits of pass-through entities.

List of Tables and Figures

Tables

1. Summary of Effects of Policy Options for Taxing Capital Income	3
2. Effective Tax Rates on Capital Income Under 2014 Law	10
3. Measures of Uniformity in Effective Tax Rates Under 2014 Law	11
4. Effective Tax Rates on Capital Income Under Options That Would Reduce the Tax on Capital Income	16
5. Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Reduce the Tax on Capital Income	17
6. Effective Tax Rates on Capital Income Under Options That Would Reduce or Eliminate Tax Preferences for Capital Income	20
7. Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Reduce or Eliminate Tax Preferences for Capital Income	21
8. Effective Tax Rates on Capital Income Under Options That Would Narrow Specific Disparities Among Tax Rates Without Changing the Overall Effective Tax Rate	24
9. Change in Dispersion of Effective Tax Rates Relative to 2014 Law Under Options That Would Narrow Specific Disparities Among Tax Rates Without Changing the Overall Effective Tax Rate	25
A-1. Distribution of Assets in 2007, by Category and Form of Organization	32
A-2. Rate-of-Return Parameters	33
A-3. Distribution of Assets, by Tax Status	34
A-4. Average Marginal Tax Rates Under 2014 Law, by Source of Income	34
B-1. Effective Tax Rates With and Without the SECA Tax	39
B-2. Effective Tax Rates Reflecting Conditions Immediately Before and After the Economic Events of 2008	40
B-3. Effective Tax Rates Under Different Assumptions About the Application of Dividend Taxes	41
B-4. Effective Tax Rates With and Without Land	42
B-5. Effective Tax Rates With and Without a Risk Premium	43
C-1. Changes in CBO's Estimates of Effective Tax Rates Since 2005	46

Figures

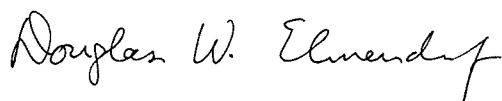
1. Range of Effective Tax Rates by Form of Organization and Source of Financing	2
2. Effective Tax Rates, by Asset Type and Form of Organization	12
3. Effective Tax Rates, by Industry and Form of Organization	14
4. Interactions Among Options That Would Reduce the Tax on Capital Income	19
5. Interactions Among Options That Would Reduce or Eliminate Tax Preferences for Capital Income	23

About This Document

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