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The "Better Way" House Tax Plan: An Economic Analysis

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Summary

On June 24, 2016, House Speaker Paul Ryan released the Better Way Tax Reform Task Force Blueprint, which provides a revision of federal income taxes. For the individual income tax, the plan would broaden the base, lower the rates (with a top rate of 33%), and alter some of the elements related to family size and structure by eliminating personal exemptions, allowing a larger standard deduction, and adding a dependent credit. For business income, the current income tax would be replaced by a cash-flow tax rebated on exports and imposed on imports, with a top rate of 20% for corporations and 25% for individuals. The cash-flow tax would be border-adjusted (imports taxed and exports excluded), making domestic consumption the tax base, although a recent announcement from congressional leaders has indicated that a border adjustment would be dropped in any future tax plan. The system would also move to a territorial tax in which foreign source income (except for easily abused income) would not be taxed. In addition, the proposal would repeal estate and gift taxes. Although the Affordable Care Act (ACA) taxes are not repealed in the Better Way tax reform proposal, ACA taxes are repealed in the Healthcare Task Force proposals.

One objective of tax reform is to increase output and efficiency. However, the plan's estimated output effects appear to be limited in size and possibly negative. The direct effect of lower marginal tax rates on labor supply is limited because the reduction in marginal tax rates is small and largely offset by an increased base that increases effective marginal rates. Capital income effects are also somewhat limited even with the movement to a cash-flow tax (that generally imposes a zero rate) because the current effective tax rate is low, due to current accelerated depreciation and the negative tax rate on debt financed investment. Growth effects are also limited because most empirical evidence does not support large savings and labor supply responses. As currently proposed, the plan loses significant revenue which, according to some estimates, could more than offset the supply responses and eventually lead to a contraction in output.

The plan would achieve efficiency gains, particularly in the allocation of capital by type and industry and in the even treatment of debt and equity finance. It would eliminate many distortions associated with multinational firms, including eliminating the tax treatment that discourages repatriation of foreign source income to the United States and the incentive for firms to invert (shift headquarters abroad) by merging.

Although claims have been made that the border adjustment would penalize imports and favor exports, a true border-adjusted tax has no effect on imports and exports due to the dollar's appreciation. There may be transitory effects, and for the blueprint, the export exemption may not be received by all exporters, which could cause the plan to act in part as a tariff. There are, however, a number of methods that might be used to obtain the benefits of the export exemption.

Studies of the distributional effects indicate that the plan increases the after-tax income of higher-income individuals compared with lower-income individuals. The plan's treatment of families of different compositions remains similar to current law, with families with children favored at low incomes and disfavored at high incomes.

The plan would simplify the tax system's administration and compliance by reducing the number of itemizers, eliminating the estate tax, simplifying depreciation, and eliminating the need for most international tax planning to shift profits out of the United States. However, some new complications would be introduced, including separating favored capital income of pass-through businesses from labor income of their owner-operators and implementing border-tax adjustments.

Other concerns about the tax reform are that the border adjustment will be found illegal by the World Trade Organization and violate bilateral tax treaties. Major changes in business taxes may also complicate the tax administration of state and local governments.

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On February 16, 2016, House Speaker Paul Ryan announced the creation of six committee-led task forces to formulate proposals. The Tax Reform Task Force was led by Ways and Means Committee Chairman Kevin Brady. On June 24, 2016, Speaker Ryan released the Tax Reform Task Force Blueprint, or the Better Way tax reform.[1] For the individual income tax, the plan would broaden the base, lower the rates, and alter some of the elements related to family size and structure. For business income, the current income tax would be replaced by a cash-flow tax rebated on exports and imposed on imports, with a top rate of 20% for corporations and 25% for individuals. The proposal would also repeal estate and gift taxes. The repeal of the Affordable Care Act taxes is not in the Better Way tax reform proposal, but these taxes along with subsidies are addressed in the House-passed American Health Care Act of 2017 (H.R. 1628).

The border adjustment (tax on imports and rebate on exports) has garnered a lot of attention and, along with international tax issues in general, was the subject of a hearing before the Ways and Means Committee.[2] A recent announcement by congressional and administration leaders indicated that border tax adjustments would be dropped from future tax plans.[3] The effect of eliminating the border tax adjustment will be discussed in the relevant sections.

Note that the blueprint is a general outline rather than a detailed proposal, with many features not fully determined. This report reviews the plan as reported in that document. The inclusion of additional features could alter this analysis.

This report describes current law and the proposed changes. It discusses economic efficiency, distributional and equity issues, administrative and compliance issues, revenue effects, and other tax-related issues.

Tax Revisions in the Blueprint

This section describes the changes in the individual income tax, the treatment of unincorporated business, the corporate tax, and the repeal of estate and gift taxes.

Individual Income Tax

The main structural elements of the individual income tax that apply to all taxpayers include the rate structure, the standard deduction or itemized deductions, personal exemptions, and the earned income tax credit. Lower- and moderate-income taxpayers with qualifying children are eligible for a partially refundable child credit. The earned income tax credit (fully refundable) is also available for lower- and some moderate-income taxpayers. Taxpayers at higher incomes are potentially subject to an alternative minimum tax. The blueprint revises all of these elements except the existing refundable child credit and the earned income credit. The values reported

[1] Office of the Speaker of the House, A Better Way: Our Vision for a Confident America, Tax, July 24, 2016, at https://abetterway.speaker.gov/_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf.

[2] Hearing on Increasing U.S Competitiveness and Preventing American Jobs from Moving Overseas, Ways and Means Committee, May 23, 2017. Witness statements are at https://waysandmeans.house.gov/event/hearing-increasing-u-s-competitiveness-preventing-american-jobs-moving-overseas/.

[3] White House, Office of the Press Secretary, Joint Statement on Tax Reform, July 27, 2017, at https://www.whitehouse.gov/the-press-office/2017/07/27/joint-statement-tax-reform?utm_content=buffer87eac&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer. The statement was made by House Speaker Paul Ryan, Senate Majority Leader Mitch McConnell, Treasury Secretary Steven Mnuchin, National Economic Council Director Gary Cohn, Senate Finance Committee Chairman Orrin Hatch, and House Ways and Means Committee Chairman Kevin Brady.

below for current law are for 2016, the year the plan was announced. (With low inflation rates, the dollar amounts are similar in 2017.) Most elements of current law are indexed for inflation, including rate brackets and deductions and exemptions. An exception is the child credit.[4]

Tax Rates

Under current law, tax rates apply at rates of 10%, 15%, 25%, 28%, 33%, 35%, and 39.6% brackets. Rate brackets are wider for joint returns (i.e., married couples) than for head of household (i.e., households with a single head with children), which are in turn wider than returns for single taxpayers. The blueprint proposes three rates: 12%, 25%, and 33%. It would replace the 10% and 15% rate with a 12% rate; the 25% and 28% rates with a 25% rate; and the remaining rates with a 33% rate. The dollar size of the rate brackets would be unchanged.

Less than 0.7% of taxpayers are subject to the 39.6% rate, and less than 0.1% to the 35% rate, which applies to a narrow bracket; taxpayers paying at these marginal rates, however, account for 15.6% and 1% respectively of adjusted gross income (AGI).[5] The 33% bracket accounts for 1.3% of taxpayers and 7.1% of adjusted gross income.

The most common top marginal tax rate for returns is the 15% bracket, which, in 2014, accounted for 28.9% of taxpayers (who accounted for 21.8% of adjusted gross income, AGI), followed by the 0% bracket, accounting for 24.2% of returns and 1.6% of AGI, then the 10% bracket accounting for 18.4% of returns and 6.5% of AGI. The 25% bracket accounted for 16.6% of returns and 26.6% of AGI. For a small share of taxpayers (6.3%) and AGI (9.6%), the top rate is the capital gains tax rate.

High-income taxpayers are also subject to a provision termed a phase out of itemized deductions, but that effectively acts as an additional increase in tax rates of 3%, by increasing taxable income by 3% of AGI up to 80% of itemized deductions. For most taxpayers, the itemized deduction constraint is not binding. In 2016, the phase out began at $259,000 for singles and $311,000 for joint returns.

High-income taxpayers are also subject to an additional tax of 3.8% of investment income (including capital gains, dividends, interest, and passive investments in unincorporated business), in excess of $200,000 for single returns and $250,000 for joint returns. There is also a 0.9% tax on wage income exceeding these amounts that goes into the Hospital Insurance Trust Fund. These provisions were enacted in the Affordable Care Act (ACA). The Better Way proposal does not address these taxes but indicates that all taxes imposed by the ACA will be repealed in different task force proposals.

Tax brackets are currently indexed for inflation and that feature would be retained.

[4] See CRS Report RL34498, *Individual Income Tax Rates and Other Key Elements of the Federal Individual Income Tax: 1988 to 2017*, by Gary Guenther for rate brackets and other elements of current tax law. See CRS Report RL33755, *Federal Income Tax Treatment of the Family*, by Jane G. Gravelle for a more detailed explanation of current law provisions.

[5] See Internal Revenue Service, Statistics of Income, Table 3.4, Tax Classified by Marginal Tax Rate, at https://www.irs.gov/uac/soi-tax-stats-individual-statistical-tables-by-tax-rate-and-income-percentile. Adjusted gross income (AGI) is smaller than economic income, because it excludes exempt income, such as employee fringe benefits, contributions to qualified retirement accounts, tax exempt state and local bond interest, and some other items.

Standard Deduction, Itemized Deductions, Personal Exemption, and the New Dependent Credit

Taxpayers may take a standard deduction or itemize deductions. About 30% of taxpayers itemize their deductions.[6] Taxpayers may take personal exemptions for themselves and their dependents. Personal exemptions are phased out at higher-income levels, and a phase out of itemized deductions is also in place although it effectively operates as an additional tax. In 2016, the standard deduction was $6,300 for singles, $9,300 for head of household returns (single heads with children), and $12,600 for joint returns. The personal exemption was $4,050, and began phasing out at the same levels for itemized deductions.

The revision eliminates personal exemptions, but offsets this elimination for the taxpayer with a larger standard deduction: $12,000 for singles; $18,000 for head of household returns, and $24,000 for joint returns. The plan adds a nonrefundable credit of $500 for dependents (child or non-child), again an offset for eliminating the personal exemption for dependents.

The plan eliminates all itemized deductions except for mortgage interest and charitable deductions. The most important deduction eliminated is the state and local taxes (income, sales, and property) deduction.

Although the standard deduction and current personal exemption are indexed for inflation, the blueprint would index the standard deduction, but apparently not the child and dependent credit. The credit will also apparently phase out at a lower-income level than the personal exemptions: $75,000 for single and $150,000 for joint returns.

Alternative Minimum Tax

Current law imposes an alternative minimum tax that applies a lower tax rate of 26% (and 28% at higher-income levels) to a broader base with a large flat deduction, which is indexed for inflation. The primary provisions added back to the base are personal exemptions, the standard deduction, and itemized deductions for state and local taxes. This tax applies only to relatively high-income individuals, but does not affect the very highest income levels.[7] The blueprint would repeal this tax.

Earned Income Credit and Child Credit

Current law provides for a fully refundable earned income tax credit, with a significantly higher rate for families with children.[8] It also provides a $1,000 per child partially refundable credit.[9] Both provisions are phased out as income rises. The blueprint leaves these provisions in place, except that it increases the child credit phase-out starting point for joint returns (from $110,000 to

[6] See Internal Revenue Service, Statistics of Income, Table 1.2, All Returns: Adjusted Gross Income, Exemptions, Deductions, and Tax Items, by Size of Adjusted Gross Income and Marital Status, at https://www.irs.gov/uac/soi-tax-stats-individual-statistical-tables-by-size-of-adjusted-gross-income.

[7] See CRS Report R44494, *The Alternative Minimum Tax for Individuals: In Brief*, by Donald J. Marples for details.

[8] See CRS Report R43805, *The Earned Income Tax Credit (EITC): An Overview*, by Gene Falk and Margot L. Crandall-Hollick; CRS Report R44057, *The Earned Income Tax Credit (EITC): An Economic Analysis*, by Margot L. Crandall-Hollick; CRS Report R43873, *The Earned Income Tax Credit (EITC): Administrative and Compliance Challenges*, by Margot L. Crandall-Hollick.

[9] See CRS Report R41935, *The Child Tax Credit: Economic Analysis and Policy Options*, by Margot L. Crandall-Hollick and CRS Report R41935, *The Child Tax Credit: Economic Analysis and Policy Options*, by Margot L. Crandall-Hollick.

$150,000), making it twice the phase-out starting point for singles ($75,000). The phase-out levels for the earned income credit are indexed for inflation; the child credit level and phase-out levels are not: these features are retained.

Interest, Dividends, and Capital Gains

Under current law, interest income is taxed at ordinary rates. Dividends and capital gains are subject to lower rates: a zero rate for individuals with ordinary rates in the 15% bracket or below and 15% for those in higher brackets, except that high-income returns at the beginning of the top, 39.6%, bracket (for 2016, above $441,000 for single returns, $441,000 for head-of-household returns, and $466,950 for joint returns) are subject to a 20% rate. There are higher rates for capital gains arising from prior depreciation and for collectibles.[10]

The proposal would tax 50% of capital gains, dividends, and interest at ordinary rates. Thus the rates would be 6% for the new 12% bracket (rates were formerly zero for capital gains and dividends and 10% or 12% for interest), 12.5% for the 25% bracket (formerly 15% for capital gains and dividends and 25% or 28% for interest), and 16.5% for the 33% bracket (formerly 15% and 20% for capital gains and dividends and 33%, 35%, and 39.6% for interest).

Pass-Through (Noncorporate) Business Income

Business income earned from pass-through businesses taxed under the individual income tax (including sole proprietorships, partnerships, and Subchapter S firms with limited numbers of stockholders that are incorporated but can elect to be taxed as unincorporated businesses) is currently subject to ordinary rates.[11] The blueprint applies a maximum rate of 25%. Earnings will be allocated to reflect the labor services of the owner-operator, which will be taxed at regular rates.

Pass-through businesses are subject to the same current capital recovery and other tax rules as corporations and will be subject to the new cash-flow tax rules as well.[12] Corporate tax treatment is discussed below.

Other Individual Tax Provisions

The blueprint indicates a variety of additional provisions will be studied and potentially changed. It indicates that incentives for retirement saving and benefits for higher education will be retained (although potentially revised). Provisions for health insurance, such as the exclusion of employer-provided insurance, are being studied by the Health Care Task Force.

Corporate Income Tax: A Destination-Based Cash-Flow Tax

Under current law, corporations are subject to a 35% tax on taxable income.[13] Some industries are allowed a 9% deduction for domestic production, lowering the tax rate on that income to 31.85%.

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[10] See CRS Report 96-769, *Capital Gains Taxes: An Overview*, by Jane G. Gravelle and CRS Report R43418, *The Taxation of Dividends: Background and Overview*, by Jane G. Gravelle and Molly F. Sherlock.

[11] See CRS Report R43104, *A Brief Overview of Business Types and Their Tax Treatment*, by Mark P. Keightley.

[12] Businesses are allowed to expense (deduct immediately) equipment investments up to a maximum with the maximum phased out as investment increases. This feature may cause the tax burden to rise for small firms with a concentration of investment in equipment, such as construction firms, because of the disallowance of interest deductions.

[13] For further details, see CRS Report R42726, *The Corporate Income Tax System: Overview and Options for Reform*,

In measuring taxable income, overhead, taxes, labor compensation, interest, and the cost of goods sold are deductible. Capital cost recovery provisions allow the cost of capital investment to be deducted over a period of years. Investments in plant and equipment are recovered through depreciation. A temporary provision, bonus depreciation, allows a fraction of investment in equipment to be deducted immediately. Intangible investments, such as research and development and advertising that create assets with future value, are deducted immediately as well. Small businesses are able to expense equipment investments in full. Research investments are also eligible for a research credit. In addition, corporations may be subject to a corporate alternative minimum tax.

The U.S. tax system technically applies on a worldwide basis so that income from foreign operations is taxed, with a credit allowed against U.S. tax for foreign income taxes paid. Income earned by foreign subsidiaries incorporated abroad is not subject to tax (except for certain types of easily shifted income taxed under Subpart F) until repatriated, or paid to the U.S. parent as a dividend. As a result of this tax deferral and the foreign-tax credit, relatively little tax is paid on foreign source income.[14]

The blueprint would impose a 20% corporate income tax and allow investments to be expensed, but disallow the interest deduction. It would eliminate the domestic production activities deduction, but would retain the research credit. This treatment would convert the income tax to a cash-flow tax and impose a zero effective marginal tax rate on investment (and a negative tax rate on research investment). The same rules (except for the tax rate) would be applied to pass-through businesses. A cash-flow tax converts an income tax into a consumption tax. A consumption tax base is composed of two parts: cash flow and labor compensation. By converting the tax on capital income to a cash flow tax, it could be viewed as a part of a value-added tax, with the other part labor compensation. The resulting overall system would be a tax referred to as an X-tax, which imposes a value-added tax.[15]

The blueprint would have some slight modifications compared to a full cash-flow tax. It would not allow land acquisitions to be expensed, and it is unclear whether inventories are to be expensed, because it refers to retaining a certain type of inventory accounting (last in-first out), which is different from expensing. The blueprint also does not spell out any details of transition rules, such as allowing depreciation recovery on existing assets, interest income and deductions on existing debt, or for carryforwards for unused credits. Net operating losses (where firms' costs exceed their revenues) will be carried forward indefinitely, with interest. There are other tax code provisions whose treatment is not clarified.

Value-added taxes only apply to physical and not financial assets. A cash-flow tax could also include financial transactions and the blueprint appears to do so as it refers to disallowing net

by Mark P. Keightley and Molly F. Sherlock. Small corporations pay at lower-graduated rates and these rates are phased out; the vast majority of corporate taxable income is subject to the top rate.

[14] For further detail, see CRS Report R41852, *U.S. International Corporate Taxation: Basic Concepts and Policy Issues*, by Mark P. Keightley.

[15] A value-added tax is like a retail sales tax imposed on the amount of value added at each stage of production. This tax or the X-tax differs from European-style value-added taxes in form, but not in substance. Those taxes use a credit-invoice method in which each firm pays taxes on total sales and gets a rebate for taxes paid by suppliers of intermediate goods and capital goods, thus effectively imposing the tax on value added. This tax and the X-tax use a subtraction method, imposing the tax on sales and deducting costs. Deducting costs of goods sold and investments produces the standard value-added basis. Deducting labor compensation splits the tax into two components, the labor portion and the remainder of value added. The same system of taxes could be achieved by imposing a value-added tax without deducting labor and allowing a series of subsidies and surcharges to produce the same tax on wages as the current income tax system.

interest deductions. How to treat financial firms such as banks under a standard value-added tax is challenging, and a variety of potential approaches exist. The blueprint notes that the plan will address the particular circumstances of financial institutions.[16]

The new cash-flow tax would also be imposed on a destination basis, that is, based on where output is consumed rather than the current system that largely imposes the income tax on where output is produced (with a small share of output produced abroad subject to tax). The destination-based tax would be implemented by taxing imports, allowing a deduction for export income, and excluding foreign-source income from tax. Value-added taxes are also imposed on a destination basis.

House Ways and Means Committee Chairman Kevin Brady has recently suggested the possible inclusion of a five-year phase in of the border adjustment and the possible inclusion of special considerations for some industries, such as financial services, shipping, communication, digital services and insurance. The committee has also been considering an allowance of interest deductions for small businesses.[17] Eliminating the border tax adjustment would make the tax a cash-flow tax imposed on production rather than consumption.

The U.S. tax system would be territorial in the sense that no tax would be imposed on foreign-source income of U.S. firms by virtue of its being foreign source (i.e., producing abroad for the non-U.S. market). Under existing law, a substantial amount of earnings abroad have been deferred and never repatriated. The proposal would tax this accumulated income over an eight-year period at 8.75% for earnings held in cash or cash equivalents and otherwise at 3.5%. If the provision follows past practice, the U.S.-foreign tax credit would be allowed but scaled back proportionally, as was the case in the 2004 repatriation holiday that allowed amounts to be brought back at a lower rate on a voluntary basis. Anti-abuse rules under Subpart F would mostly be eliminated except for certain rules about passive income, such as interest income.

Estate and Gift Tax

Current law has a 40% estate tax with an exemption of $5.45 million in 2016 and $5.49 million in 2017. The blueprint will repeal the estate tax. Its companion, the generation-skipping tax that prevents donors from passing on assets to the generation after the next (e.g., to grandchildren) also will be repealed. The blueprint does not mention the gift tax, but it might also be repealed, as it could be avoided by foregoing large gifts and keeping assets in the estate. Retaining the gift tax would discourage inter vivos giving.

Economic Efficiency and Growth

Gains in economic efficiency are a traditional objective of tax reform. Efficiency gains have often been conflated with economic growth, but the concepts are different. Efficiency gains arise from an improved allocation of resources whereas economic growth arises from increases in labor and capital. The efficiency objective is to maximize well-being (referred to as utility in economics terms). The two are related to some of the measures but viewed differently. For example, if a marginal tax rate cut increases labor supply the growth effect is the value of additional output, but

[16] For a further discussion of the treatment of financial flows in a cash-flow tax, see Elena Patel and John McClelland, "What Would a Cash Flow Tax Look Like for U.S. Companies? Lessons from a Historical Panel," The Department of the Treasury, Office of Tax Analysis, Working Paper no. 116, January, 2017, at https://www.treasury.gov/resource-center/tax-policy/tax-analysis/Documents/WP-116.pdf.

[17] Dylan F. Moroses, "Brady Proposes 5-Year Phase-In of Border-Adjustable Tax," Tax Notes, June 19, 2017, pp. 1670-1672.

the efficiency gain is the increased income minus the loss in the value of leisure or unpaid work (such as child care). Increased work always adds to economic growth but does not necessarily add to efficiency or well-being.

Labor supply is affected by income and substitution effects. When effective rates are cut, a rise in income allows individuals to consume both more goods and leisure, and thus reduces work effort. The substitution effect causes goods to be cheaper and encourages more work. Only the substitution effect and the marginal rate relate to efficiency gain (reducing the distortion between the consumption of goods, financed by working, and the consumption of leisure).

Similarly, an increase in the rate of return has two conflicting effects on savings: a higher rate of return means that individuals can consume more both in the present and the future; consuming more in the present means a reduction in savings. A higher rate of return also encourages the substitution of future consumption for present consumption, increasing savings. The effect on savings also, however, depends on the timing of tax payments. To the extent, for example, that consumption taxes shift tax payments to the future (when assets may be drawn down in retirement and used to consume), a taxpayer should save more to finance those future tax payments.

Whereas growth effects depend on income and substitution effects, and thus on both average and marginal rates, efficiency effects depend on marginal effective tax rates, for both labor and capital. As with labor, the efficiency gain from reducing marginal tax rates on capital income is not the amount of consumption it allows in the future, but the difference in the value of that consumption compared to foregone present consumption.

Effects on Labor and the Allocation of Spending

The Tax Policy Center (TPC) estimated the effective marginal tax rates on wages, salaries, and self- employment income for current law and under the blueprint.[18] TPC found that the average marginal income tax rate fell from 24.7% to 22.9%, or a 1.9 percentage point decrease. Its revenue analysis indicates that the tax's structural elements that drive these effects are roughly revenue neutral suggesting there would be no income effect. The percentage increase in net of tax wage (1 minus the tax rate) was 2.4% (based on the 0.771 to 0.753 ratio). Based on the Joint Committee on Taxation's labor substitution elasticity, 0.1 to 0.2, the effects would increase labor input by 0.24% to 0.48%.[19] With labor accounting for about two-thirds of gross domestic product (GDP), the effect on output would be 0.16% to 0.32% in the short run. The effects would be closer to 0.24% and 0.48% in the long run.[20]

[18] Leonard E. Burman et al., "An Analysis of the House GOP Tax Plan," *Columbia Journal of Tax Law*, Vol. 8, 2017, pp. 257-293, at https://taxlaw.journals.cdrs.columbia.edu/wp-content/uploads/sites/10/2017/04/Burman.pdf. These estimates are also in an earlier study by Jim Nunns et al., *An Analysis of the House GOP Tax Plan*, Urban Institute and Brookings Institution Tax Policy Center, September 16, 2016, at http://www.taxpolicycenter.org/publications/analysis-house-gop-tax-plan.

[19] For these results, multiply the elasticity by the percentage change in marginal after tax wage. For the Joint Committee on Taxation's (JTC's) elasticities used, see Macroeconomic Analysis of the Tax Reform Act of 2014, JCT-22-14, February 26, 2014, at https://www.jct.gov/publications.html?func=startdown&id=4564. For a review of the empirical evidence on labor supply response, see CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.

[20] As labor income increases, it provides a source of savings that, if the economy were composed of identical individuals who worked and saved, would eventually generate a proportional increase in capital so that the two-thirds share would no longer apply.

These effects are overstated, however, because they do not account for the base broadening effect on marginal effective tax rates. Disallowing state and local tax deductions is an increase in the share of taxes out of an additional dollar. Similarly, any item of expenditure (such as charitable contributions or mortgages interest) that is paid for out of labor income would affect the marginal effective rate for individuals who shift to the standard deduction.[21] The major itemized deductions are mortgage interest, charitable contributions, and state and local taxes.

To determine the importance of this issue in general, data from the Internal Revenue Service's Statistics of Income indicate that 23.2% of total wages accrued to itemizers who are likely to continue to itemize (income classes above $200,000) but would no longer be able to deduct state and local taxes, which accounted for 7.65% of AGI.[22] Using the marginal tax rate for the top quintile, 28.4%, overall marginal tax rates would increase by 0.5 percentage points. The remainder of itemizers account for 36.3% of wage income, have itemized deductions equal to 24.1% of income, and using the tax rate for the fourth quintile of 19.3% have an increase of 1.7 percentage points. The total, 2.2 percentage points, more than offsets the direct marginal rate reductions.

It is unclear whether mortgage interest and property tax deductions should be seen as labor income or capital income benefits. If they are considered capital income subsidies, then the offset would be reduced by 47% of the 1.7 percentage point effect, and a negligible amount of the 0.5 percentage points, for a total of 1.4 percentage points. With this view, the base broadening from itemizing deductions would offset three quarters of the rate reduction.

Note also that the mortgage interest deduction may not have a marginal impact in the short run because it is largely affected by existing mortgages. It should have an effect in the longer term.

Although this is a rough calculation, it suggests negligible effects on labor supply from reducing marginal individual income tax rates, in turn suggesting little effect on growth or efficiency.

The base broadening changes as well as rates can also have an effect on the allocation of consumption. The direct disallowance of itemized deductions or the reduction in itemizers (largely as a result of disallowing state and local taxes as a deduction) and to a lesser extent the lower top rate would reduce the degree to which the tax system subsidizes these deductions. The deductions, in turn, favor certain types of consumption provided through labor and other incomes: state and local goods and services, owner-occupied housing (through mortgage interest and real estate tax deductions), and charitable contributions.

Although a full treatment of these subsidies is beyond the scope of this report, there is some disagreement about the justification for subsidizing these items. Many economists criticize the deductions that favor home ownership as encouraging too much investment in housing, although some arguments (contributing to stable communities and providing an important retirement asset for much of the middle class) could be made in favor of those provisions. Those arguments,

[21] For a discussion of this point, see CRS Report R44242, *The Effect of Base-Broadening Measures on Labor Supply and Investment: Considerations for Tax Reform*, by Jane G. Gravelle and Donald J. Marples and CRS Report R43079, *Restrictions on Itemized Tax Deductions: Policy Options and Analysis*, by Jane G. Gravelle and Sean Lowry. See also Jane G. Gravelle and G. Thomas Woodward, "Clarifying the Relation between Base-Broadening and Effective marginal Tax Rates," Proceedings of the National Tax Association's Proceedings, 2013, at https://www.ntanet.org/wp-content/uploads/proceedings/2013/NTA-Tampa-paper.pdf.

[22] See Internal Revenue Service, Statistics of Income, Table 1.2, All Returns: Adjusted Gross Income, Exemptions, Deductions, and Tax Items by Size of Adjusted Gross Income and Marital Status; and Table 2.1, Individual Income Tax Returns with Itemized Deductions: Sources of Income, Adjustments, Itemized Deductions by Type, Exemptions, and Tax Items, by Size of Adjusted Gross Income, at https://www.irs.gov/uac/soi-tax-stats-individual-statistical-tables-by-size-of-adjusted-gross-income.

however, largely justify benefits for moderate income taxpayers and not wealthy ones. State and local tax deductions require all taxpayers to subsidize spending in particular states, although some spillover effects from this spending may occur (e.g., use of highways by nonresidents and spillovers from education because of mobility). Charitable contributions have been viewed more favorably because charitable giving is undersupplied in a market economy.[23] At the same time, some would argue that tax subsidies favor the charities that benefit higher-income taxpayers (such as the arts and higher education) and that some response estimations to the tax subsidy suggest that a dollar of revenue loss results in less than a dollar of charitable contributions, indicating that the government could deliver more to charity per dollar through direct spending.[24]

Note that some itemized deductions also repealed by the blueprint—such as extraordinary medical expenses, casualty losses, investment expenses, and employee expenses—are seen to reflect an ability to pay or to be an appropriate measure of income, rather than an incentive.

In addition, note that the incentive for charitable contributions will also be reduced through repeal of the estate and gift tax.

Effects on Investment and Saving

In several respects the proposal will likely lead to efficiency gains in the allocation of capital, by type and by form (equity or debt). Its effect on growth via an increase in the capital stock depends on potential offsetting forces of increases in the rate of return and increases in public borrowing due to debt.

The Allocation of Capital by Physical Type and Sector

The current income tax is characterized by significant variations in the effective tax rate due to variations in how rapidly costs are recovered. **Table 1** shows estimates of effective tax rates on the returns to investment at the margin for different types of equity investments under two sets of assumptions regarding the taxability of shareholders (see table notes). The table excludes land, which is not reproducible, and inventories, whose short holding period makes investment in them relatively insensitive to tax rates.

Effective tax rates measure the share of the return to investment at the margin that is collected in taxes. The primary differences between the two sets of assumptions are the shares of taxable shareholders; the CRS assumptions allocate based on ownership and include foreign owned shares and their U.S. taxes. The CBO assumptions consider the distribution among U.S. shareholders with adjustments for the shares of taxable and nontaxable excluding those below the ceilings of retirement accounts. The CBO estimated tax rates are also slightly higher.

The first column of estimates shows the tax rates at the corporate level, which would be 35% without any type of subsidy. Investment in intangibles is already subject to cash-flow treatment, and investment in research has a negative effective tax because of the research credit. Tax rates are higher for equipment and public-utility structures and even higher for other structures. The

[23] This undersupply occurs because of free-riding; the value of meeting charitable preferences (such as helping low income individuals) is supplied in large part by others.

[24] See CRS Report R42435, *The Challenge of Individual Income Tax Reform: An Economic Analysis of Tax Base Broadening*, by Jane G. Gravelle and Thomas L. Hungerford, where the arguments are summarized. See also CRS Report R41596, *The Mortgage Interest and Property Tax Deductions: Analysis and Options*, by Mark P. Keightley; CRS Report R40518, *Charitable Contributions: The Itemized Deduction Cap and Other FY2011 Budget Options*, by Jane G. Gravelle and Donald J. Marples; and CRS Report RL32781, *Federal Deductibility of State and Local Taxes*, by Steven Maguire and Jeffrey M. Stupak.

corporate total rates add the shareholder level taxes on capital gains and dividends. These effects are small because of the low rates and limited shares of assets held by taxable shareholders. Tax rates are higher for the corporate sector, depending on the asset, but the differences are small in the aggregate because the corporate sector has a larger share of tax favored intangibles and equipment. The differences between sectors are larger for tangible assets.

Table 1. Effective Tax Rates on Equity Investments, Current Law

(in percentages)

Asset Type	Corporate Firm	Corporate Total	Corporate Total: CBO Assumptions	Noncorporate	Noncorporate: CBO Assumptions
Equipment	23.6	26.1	26.5	18.8	22.8
Public Utility Structures	24.9	27.3	27.7	19.8	23.6
Other Nonresidential Structures	30.8	33.0	33.3	25.0	29.7
Residential Structures	28.2	30.5	30.9	22.6	26.9
Intangibles					
R&D Intangibles	-63.3	-57.9	-57.1	-65.2	-66.1
Advertising Intangibles	0.0	3.3	3.8	0.0	0.0
Other Intangibles	0.0	3.3	3.8	0.0	0.0
Total	19.7	22.4	23.6	21.1	25.6

Sources: Congressional Research Service (CRS). See CRS Report R44638, *Corporate Tax Integration and Tax Reform*, by Jane G. Gravelle for method of computation and assumptions. See CBO, *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options*, December 2014, at https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/49817-Taxing_Capital_Income_0.pdf.

Notes: The corporate statutory rate used is 34.14% to reflect the production activities deduction. Alternative estimates using Congressional Budget Office (CBO) shares of taxable stocks and tax rates reflect somewhat higher tax rates on dividends (18.4% rather than 16.4%), capital gains (21.2% rather than 17.1%), and noncorporate investment (33.1% rather than 28%). Total taxable shares of stock are 25% in the basic case and 57.2% under the CBO assumptions, because the CBO assumptions exclude foreign shareholders and tax exempt investments by individuals at the ceiling. The other assumptions and underlying data include a corporate after-tax real discount rate of 7% and an inflation rate of 2%, used in all simulations. (These assumptions differ slightly from the CBO assumptions of 5.8% and 2.4%, although effective tax rates are almost insensitive to the real discount rate.) The share of earnings paid in dividends and the share of capital gains realized, as well as economic and tax depreciation rules, are the same. Note that these tables do not include land, which is not reproducible, and inventories, whose short lives make them likely relatively insensitive to the rates of return. Both are taxed at rates above the rates for other nonresidential structures (land at the statutory rate and inventories above the statutory rate; CBO estimates).

Effective tax rates for the blueprint are shown in **Table 2**. Because the tax is a cash-flow tax, all firm-level taxes are at zero except for investment in research, which benefits from the credit. Total tax rates are close to zero. The blueprint has no differences across assets except for research intangibles within a sector and very small effects across sectors. Thus the blueprint tax plan reduces and largely eliminates the misallocation of capital across asset types.[25] Moreover, there could be justifications for the favorable treatment for research, which has positive spillovers.

[25] When returns to some types of assets are taxed at lower rates than others, more investment is made in those asset

Table 2. Effective Tax Rates on Equity Investments, "Better Way" Blueprint

(in percentages)

Asset Type	Corporate Firm	Corporate Total	Corporate Total: CBO Assumptions	Noncorporate	Noncorporate: CBO Assumptions
Equipment	0.0	2.6	6.8	0.0	0.0
Public Utility Structures	0.0	2.6	6.8	0.0	0.0
Other Nonresidential Structures	0.0	2.6	6.8	0.0	0.0
Residential Structures	0.0	2.6	6.8	0.0	0.0
Intangibles					
R&D Intangibles	-63.3	-58.9	-52.4	-65.2	-66.1
Advertising Intangibles	0.0	2.6	6.8	0.0	0.0
Other Intangibles	0.0	2.6	6.8	0.0	0.0
Total	-4.4	-1.7	2.6	-1.0	-1.0

Sources: CRS calculations with assumptions in CRS Report R44638, *Corporate Tax Integration and Tax Reform*.

Note: Corporate total tax rates reflect estimates of changes in marginal tax rates on capital gains and dividends by 6.7 percentage points for capital gains and 5.6 percentage points for dividends.

A Note on Dividend Payout Rates and Capital Gains Realizations

The current tax treatment also has effects on dividend policy and capital gains realizations, which produce distortions, because capital gains taxes are not due until income is realized. The somewhat lower capital gains and dividend tax rates would reduce this effect, although this effect would be offset by higher after-tax rates of return. Under current law, very high-income taxpayers pay 23.8% (the income tax rate and the tax on investment income) and that rate would fall to 16.5%. Some taxpayers currently subject to a 15% rate would now pay 12.5%. These tax rate changes are relatively small, and, in addition, a significant portion of assets is held in nontaxable forms (i.e., retirement savings), so the effect would be relatively small.[26]

Debt Versus Equity Finance

Some investment is financed by debt rather than equity, resulting in two effects. Debt is currently favored over equity and thus the tax creates a distortion between debt and equity finance. At the same time, because taxes on debt finance are lower (because interest is deductible), debt finance leads to overall lower taxes, narrowing the distortions between the corporate and noncorporate

types. Presuming the private market can allocate resources to their best uses, these tax differentials cause a misallocation of assets that reduces productivity and value. A more favorable treatment of an asset could, however, lead to a more efficient allocation if there are positives spillovers of benefits to others.

[26] The most recent evidence on the effect of taxes on dividends on choices to pay out or retain was based on the response to the 2003 tax cut, which lowered the tax rate on dividends from ordinary rates to capital gains tax rates. Although some research found significant effects on payouts, Edgerton advances several factors that indicate very little response. For his review and comments, see Jesse Edgerton, "Four Facts about Dividend Payouts and the 2003 Tax Cut," *International Tax and Public Finance*, vol. 20, iss. 5 (2013), pp. 769-784. A large body of empirical estimates has found a wide range of estimated responses of realizations to capital gains tax rates, although the large responses found in some early studies have been explained by timing and smaller results have recently appeared. For a review, see CRS Report R41364, *Capital Gains Tax Options: Behavioral Responses and Revenues*, by Jane G. Gravelle.

sectors (because the corporate sector's higher tax rate favors debt finance). **Table 3** shows the aggregate tax rates on equity, debt, and combined debt and equity. As shown in the table, debt finance is subject to negative tax rates in the corporate sector because tax at which the interest is deducted is much higher than the rate imposed on the creditor (mainly because of the large share of tax-exempt creditors). The difference between debt and equity is more pronounced in the corporate sector because of the higher corporate tax rate (relative to the rates for noncorporate firms).The CBO estimates assume a larger share of taxable creditors with that share larger for the noncorporate sector and thus results in a small estimated positive rate for the noncorporate sector. Tax-favored debt-financed investment also reduces overall effective tax rates and reverses the relative tax burdens across the sectors with aggregate noncorporate burdens higher than corporate ones (although for the basic assumptions the difference is negligible.) CBO also assumes a lower leveraging ratio for the noncorporate sector, which increases the overall tax rate in that sector compared with the corporate tax rate. Nevertheless, in both cases, the differences in overall tax rates are not large.

Table 3. Effective Tax Rates on Corporate and Noncorporate Investments, Current Law

(in percentages)

Type of Tax Rate	Corporate Firm	Corporate Total	Corporate Total: CBO Assumptions	Noncorporate	Noncorporate: CBO Assumptions
Equity Financed	19.7	22.4	26.5	21.1	25.6
Debt Financed	-53.5	-44.0	-23.0	-20.6	2.4
Weighted Equity and Debt Financed	5.7	9.6	15.1	11.8	21.8

Source: CRS Report R44638, *Corporate Tax Integration and Tax Reform*.

Table 4 shows the effective tax rates for the blueprint. Tax burdens on equity finance fall and those on debt rise, with an overall decline, small negative tax rates with the CRS assumptions reflected in CRS Report R44638, *Corporate Tax Integration and Tax Reform*, and small positive ones with the CBO assumptions.

Table 4. Effective Tax Rates on Corporate and Noncorporate Investments, the "Better Way" Blueprint

(in percentages)

Type of Tax Rate	Corporate Firm	Corporate Total	Corporate Total: CBO Assumptions	Noncorporate	Noncorporate: CBO Assumptions
Equity Financed	-4.4	-1.7	2.6	-1.0	-1.0
Debt Financed	-5.3	-2.2	4.6	1.2	11.9
Weighted Equity and Debt Financed	-4.7	-2.0	3.1	-0.4	2.8

Source: CRS calculations with assumptions from CRS Report R44638, *Corporate Tax Integration and Tax Reform*.

Total Tax Rates

For purposes of considering overall savings and investment, it is important to consider the overall effective tax rates. The CBO assumptions may be more appropriate for measuring domestic savings effects, whereas the Congressional Research Service (CRS) assumptions may be better for a U.S.-investment effect (including investment from abroad).

Combining the tax rates on the corporate and noncorporate sections in **Table 3** and **Table 4** indicates that, under current law, the combined business tax rate is 10.5% and 17.9% for the basic estimates and those using CBO assumptions about debt levels and taxability of shareholders and creditors. Under the blueprint, they would fall to 1.4% and 3.0%, respectively.

Although the size of inventories is not likely to be sensitive to tax rates, inventories' taxes should be included in the total calculations for savings and overall investment. The returns are taxed at the statutory rate or higher, depending on the inventory method used.[27] Total effective tax rates on business investment were 12.7% (22.7% under the CBO assumptions). Under the blueprint, these rates fall to 5.3% and 6.5%.

Another asset to consider including in the savings effects calculations is owner-occupied housing. Based on CBO assumptions, owner-occupied housing comprises 41% of total investment.[28] Estimated tax rates were -9% for the CRS estimates and -1.1% for the CBO estimates.[29] Under the blueprint, owner-occupied housing rates rise to -1.1% and 3%.

Overall effective tax rates combining business and housing investments are estimated at 4.8% under current law (14.4% for CBO assumptions). These effective rates are -2.9% and 5.1%, respectively, for the blueprint provisions.

Tax Policy Center's Estimates of Business Effective Tax Rates

The Tax Policy Center (TCP) also reported estimated effective tax rates. The TCP estimates an overall effective business tax rate of 22% falling to a 6.3% rate, an estimate similar to the business investments' estimates, using the CBO assumptions.[30]

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[27] For calculating tax rates on inventories, the CBO estimate of a 40% tax rate for the corporate sector was used, and was scaled up in the same proportion for the noncorporate sector and the rates in the blueprint (20% for corporations and 25% for pass-throughs). The adjustment also used the share of inventories (as share of tangible assets) reported by CBO, recalculated to reflect the asset mix; it is estimated at 9.4% in both sectors.

[28] CBO's own estimates of shares were adjusted to exclude land and to include intangible assets.

[29] The formula for estimating the pretax return is $f(i(1-nt)-\pi)+(1-f)E-ntg$, where f is the debt share, i is the nominal interest rate, n is the share of mortgage interest and property taxes deducted, t is the homeowner's marginal tax rate, π is the inflation rate, E is the after tax return to equity, and g is the rate of property tax. These estimates used CBO estimates of homeowner's tax rate (18.8%), share of mortgage interest and property tax deducted (94%), and property tax rate (1.4%). The tax rates were assumed to fall by a percentage point (based on the Tax Policy Center's changes in marginal tax rates) and allowing 23% of mortgage interest (based on IRS Statistics of Income) and no property taxes to be deducted. The CBO estimates used a debt share of 43% and used a taxable share of debt to creditors of 77.9%. The CRS estimates used the same shares as for other assets.

[30] Leonard E. Burman et al., "An Analysis of the House GOP Tax Plan," *Columbia Journal of Tax Law*, Vol. 8, 2017, pp. 257-293, at https://taxlaw.journals.cdrs.columbia.edu/wp-content/uploads/sites/10/2017/04/Burman.pdf. This study is largely an earlier version of a Tax Policy Center study with some changes in the distributional and growth effects. See Jim Nunns et al., *An Analysis of the House GOP Tax Plan*, Urban Institute and Brookings Institution Tax Policy Center, September 16, 2016, at http://www.taxpolicycenter.org/publications/analysis-house-gop-tax-plan. The revised economic growth effects are smaller than the initial ones.

Effects on Growth

Three estimates have been made of the growth effects of the blueprint and project very different effects. Different estimates reflect, in part, different sources of growth. There are three sources: (1) short-run stimulative effects, which are transitory and depend on the Federal Reserve's response; (2) supply side effects, where labor and capital respond to tax rates and capital can flow from abroad or result from domestic savings (where effects depend on behavioral responses); and (3) crowding out due to deficits, which depend on the magnitude of the deficit and the extent to which it can be financed by borrowing from abroad.[31]

The Urban-Brookings Tax Policy Center's (TPC's) analysis used two different models.[32] One model captures all three effects using a demand-side (Keynesian) model that transitions to a neoclassical growth model. In a neoclassical growth model output increases with individuals' increase in labor supply and savings, with the capital stock changing slowly. That model estimates a 1% increase in output in the first full fiscal year (FY2017). This effect would decline to 0.7% in the second year, and 0.2% in the third year. These effects are demand-side effects. The short-run effect disappears after the first four years and the effect turns negative by FY2021 (at a loss of 0.2%). Negative effects occur when crowding out reduces the capital stock more than induced saving increases it and the resultant reduction in output from the smaller capital stock more than offsets any increased labor supply. In the first 10 years, the plan reduces output by 0.5% overall; in the second 10 years, it reduces output by 1%. Note that these are not cumulative growth rates but rather the difference in each year in output with and without the tax change. The second model is a dynamic life cycle model (a model where many generations coexist and make savings and work decisions over a lifetime) that captures both supply-side effects and the crowding-out effects of increased deficits, but not the short-run demand-side effects. It begins with an increase in output of 0.9% in FY2017, declining to 0.1% by 2022, becoming negative (-0.1%) in 2023, and declining to a loss of 0.5% in 2026. In the first 10 years, output is reduced by 0.5% and in the second ten years by 2.6%.

The Tax Foundation finds a significant positive effect.[33] Its estimate projects output in the long run to increase by 9.1%, primarily due to changes in capital income taxes. The basic model type is a neoclassical growth model with an immediate transition to the long run. The results reflect only supply side effects and do not include short-run demand effects or crowding out.

Auerbach, Kotlikoff, and Koehler hereinafter AKK) provide an estimate of wage growth of 8% using the Global Gaidar Model.[34] They characterize this result as optimistic. While they don't

[31] For a discussion of dynamic models see CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.

[32] Ben Page, Dynamic Analysis of the House GOP Tax Plan: An Update, Tax Policy Center, June 30, 2017, http://www.taxpolicycenter.org/sites/default/files/publication/142556/2001397-dynamic-scoring-of-tax-plans-and-analysis-of-the-house-gop-plan.pdf. Macroeconomic estimates were included in the two studies cited in the previous footnote, but rather than a Keynesian model that eventually became a neoclassical growth model (which included responses of labor and capital and crowding out), that model had only the Keynesian elements and estimated a 1% increase in output in the first year, a 0.7% in the second year, 0.3% in the third year, and 0.1% in the fourth, with no effects afterwards. Adding the neoclassical growth model led to the negative effects as crowding out became an issue.

[33] Kyle Pomerleau, *Details and Analysis of the 2016 House Republican Tax Plan*, Tax Foundation, Fiscal Fact no. 516, July 5, 2016, at https://taxfoundation.org/details-and-analysis-2016-house-republican-tax-reform-plan.

[34] Auerbach, Alan, Laurence Kotlikoff, and Darryl Koehler, "Assessing the House Republicans' 'A Better Way' Tax Reform," May 1, 2017, at http://eml.berkeley.edu/~auerbach/Assessing%20the%20House%20Republican%20Tax%20Reform%20Plan%205-3-17.pdf. The model is outlined in Seth G. Benzell et al., "Simulating Russia's and Other Large Economies' Challenging and Interconnected Transitions," at https://kotlikoff.net/sites/default/files/russia-2-0.pdf.

report output growth, that growth rate should be similar. The basic model type is a life-cycle model with multiple worldwide regions. Their results appear to arise largely from an increase flow of capital from abroad in a mode where capital is perfectly substitutable across countries. This model also does not consider short-run demand effects or crowding out.

The TPC has some sensitivity analysis in their life-cycle model, with an optimistic scenario where output increases quickly to a 1% increase which is fairly stable over time. A pessimistic scenario shows a decline in output by 2019 and, by 2040, a reduction of 9% of GDP.[35] The growth effects appear to be positive in the optimistic case in part because it apparently assumes that deficits can be largely financed with borrowing from abroad, and negative in the pessimistic case in part because all deficits must be financed through the crowding out of investment.

To assist in understanding how estimates for growth effects arising from supply side effects can vary widely, a simple growth model showing the steady state effects has been constructed (see **Appendix**). This model relies on three elasticities: (1) savings elasticity (denoted as ER), (2) labor supply elasticity (denoted as ES-EI, which reflects a net of the substitution and income elasticities), and (3) factor substitution elasticity (denoted as S, which reflects the ease with which labor and capital can be substituted in the production function). An elasticity is a percentage change in quantity divided by a percentage change in price. For the savings response, it is the percentage change in the savings rate divided by the percentage change in after tax rate of return. The labor substitution elasticity is the percentage change in labor supply divided by the percentage change in after tax wage at the margin or last increment of work. The labor income elasticity, which is negative, is the percentage change in labor supply divided by the percentage change in after tax average wage. The factor substitution elasticity is the percentage change in the ratio of labor to capital divided by the percentage change in the ratio of the wage rate to the pretax return.

The model is a closed model that is similar to the one used by the Tax Foundation (open economy issues will be discussed subsequently). It is important to understand how estimates for the effects of a tax change of this nature depend on so many fundamental values and estimates.

To illustrate the uncertainties with supply side effects, first consider the two sets of estimated tax rate differentials; **Table 5** and **Table 6** estimate the long-run results using the two tax rate effects discussed in this analysis. Also, consistent with the discussion of marginal taxes on wages, the calculations assumes there is no direct effect on labor from tax reductions, although an expansion of the capital stock drives up wages and labor supply increases in response.

Table 5. Long-Run Percentage Increase in Output, Tax Rates with CRS Assumptions

	ER= 0.2	ER=0.5	ER= Infinity
S = 1			
ES-EI = 0.5	0.8	1.2	2.1
ES-EI = 0.1	0.6	0.9	1.6
S = 0.5			

[35] Burman et al., and The Tax Policy Center (TPC) describe its assumptions as a 0.5 labor supply elasticity in the base case, with an elasticity of 1.0 for the optimistic and 0.25 for the pessimistic. These sensitivity estimates appeared in the earlier TPC citations and not in the June 30, 2017 update. Its savings elasticity is the same. The economy in the optimistic case is fully open and in the pessimistic case fully closed with a 40% openness for the base case. It is difficult, however, to interpret the meaning of these estimates for a life-cycle model where these elasticities are not direct inputs into the model. These sensitivity estimates appeared in the earlier TPC citations and not in the June 30, 2017 update.

	ER= 0.2	ER=0.5	ER= Infinity
ES-EI = 0.5	0.7	1.0	1.4
ES-EI = 0.1	0.4	0.6	0.8

Source: CRS calculations, see **Appendix**.

Notes: S = factor substitution elasticity, ES = labor substitution elasticity, EI = labor income elasticity, ES-EI = labor supply elasticity, and ER = savings elasticity. The aggregate depreciation rate is 11%.

Table 6. Long-Run Percentage Increase in Output, Tax Rates with CBO Assumptions

	ER= 0.2	ER=0.5	ER= Infinity
S =1			
ES-EI =0.5	1.0	1.7	3.1
ES-EI = 0.1	0.8	1.3	2.3
S = 0.5			
ES-EI = 0.5	1.0	1.5	2.0
ES-EI = 0.1	0.6	0.9	1.2

Source: CRS calculations, see **Appendix**.

Notes: S = factor substitution elasticity, ES = labor substitution elasticity, EI = labor income elasticity, ES-EI = labor supply elasticity, and ER = savings elasticity. The aggregate depreciation rate is 11%.

These tables illustrate the importance of both the measurement of the tax change and the various elasticities. If the TPC's marginal tax rates on wages were also included in the estimate (not considering the offset of base broadening provisions), there would be an additional increase in output.[36] These same changes applied to the Tax Foundation estimates, with a labor supply elasticity of 0.3, would produce an additional 0.7% increase in output. These effects would be smaller in the short run.[37]

The Tax Foundation model uses an infinite savings elasticity and, as noted above, a 0.3 labor supply elasticity. Their large output effect is difficult to explain with the model above: using the CRS estimates of tax rate with CBO assumptions about shareholders and debt, a projected 2.8% growth rate would be expected with an infinite elasticity of savings, and a 0.3 labor supply elasticity. Using the TPC's measure of marginal effective tax rate change on labor income, this elasticity would add 0.7%. Larger effects would be expected in a model that did not include economic depreciation in the cost of capital or had a smaller depreciation rate. In the model

[36] In a life cycle model such as the one used by the TPC, there are a variety of parameters that produce several different labor supply elasticities, so that there is no obvious way to approximate the effect of the changes in tax rates on labor, which would affect only some of these responses. In the short run, labor supply would rise because of the marginal tax rate reductions and the increase in after tax return, which would induce saving, including saving in the form of shifting the consumption of leisure to the future through more work in the present to allow more leisure in the future. In the long run, the wage rate would rise both directly, if marginal tax rates on wages were viewed to fall, and indirectly, because the capital stock increases and wages increase. Not enough information is provided to determine what these effects would look like. There are two labor supply elasticities, an intertemporal response to changes in wage rates over time determined by the intertemporal labor supply elasticity and the response to a permanent change in wages. See CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.

[37] The marginal rate change from the Tax Policy Center's Analysis is a reduction from 24.7% to 22.9% so the change is 0.7 times (.247-.229)/(1-.238) where 23.8% is the midpoint between the old and new rates. The 0.3 elasticity is reported in Tax Foundation, Overview of the Tax Foundation's Taxes and Growth Model, at https://taxfoundation.org/overview-tax-foundation-s-taxes-and-growth-model.

above, with the same elasticities, a model without depreciation would produce an effect of 4.4%, which added to the labor supply effect would be 5.1%.[38] A likelihood may be that a full or an additional explanation is that the Tax Foundation's tax change is much larger. This larger effect could be partially explained by a different mix of capital stock, focusing more on the capital assets whose rates were reduced by the change and not including those (intangible assets and owner-occupied housing) that were increased by the change.

The AKK model is likely to closely approach the results for an infinite elasticity because it has an open economy and its lifecycle elements are likely to lead to significant growth. AKK report the tax rates they use are estimated to fall from 34.6% to 16.1%. The effect of the tax rate changes on capital income, which is the main driver of effects, is 3.1 times the CRS tax rate changes with CRS assumptions and 2.4 times the effects of the CRS tax rate changes with the CBO assumptions.[39] The tax rate differential alone would suggest an output effect of around 6% at an infinite savings elasticity and the other most generous assumptions (the higher labor supply and factor substitution elasticities). The effect is 36% higher than the rate reported by the TPC, and using the infinite elasticity that rate would imply a 5% output increase. The TPC and AKK rates exclude owner-occupied housing and that is a significant reason for the larger tax rate effects.[40]

This growth effects discussion illustrates that assumptions that go into models, including behavioral responses estimates, crowding out treatment, and a proper measurement of the tax rate changes, are important and reinforce each other in some cases, that is, high elasticities magnify differences in the measurement of tax rate changes on output.

What might be a reasonable estimate of the savings and labor supply effects? Both the empirical evidence and the agencies' practices are reviewed in a report of dynamic scoring.[41] Considering models like the one depicted here and the one used by the Tax Foundation, empirical evidence suggests a labor substitution elasticity from close to zero to 0.3, an income elasticity of 0 to -0.1, and a net labor supply elasticity ranging from -0.1 to 0.3. The JCT has used a substitution elasticity of 0.2 and an income elasticity of -.1 for a net labor supply elasticity of 0.1 in their model of this type, whereas CBO used a substitution elasticity of 0.24, an income elasticity of -0.05, and a net labor supply elasticity of 0.19. Empirical evidence on savings elasticities suggests an elasticity around zero, which ranges from negative to positive.[42] In their model of this type,

[38] This calculation assumes the capital income share is reduced to 25% in a net output model.

[39] The tax rate affects growth as measured by the change in the required pre-tax return, which is the change in net of tax return or the change in tax divided by 1 minus the initial tax rate. For a large discrete change the initial tax rate should be the midpoint of the old and new tax rates. Thus the percentage change with the AKK rates is 24.8%. The mid-point is 0.254 and the change is 0.346 minus 0.1612. The percentage change for the rates with CRS assumptions (4.8% to a negative 2.9%) is 7.8% and the percentage change for the rates with CBO assumptions (14.4% to 5.1%). is 10.3%.

[40] The rate used in the AKK study was provided by Mintz and Basel and published on the Tax Foundation website. See Jack Mintz and Philip Basel, "Competitiveness Impact of Tax Reform for the United States, Tax Foundation, Fiscal Fact No. 546, at https://taxfoundation.org/competitiveness-impact-of-tax-reform-for-the-united-states/. Several elements cause the effects of this rate to be larger than the ones estimated in this report, with the most important being the exclusion of tax rate changes for owner- occupied housing (which was also excluded by the Tax Policy Center estimates). The Mintz estimates are only for the corporate sector, and only for the firm level tax (no effects of shareholders and creditor taxes, which would make them larger) and they do not include intangible assets (which would make them smaller). The rates are higher in absolute value because they include state and local taxes, not only income taxes which tend to be small, but sales taxes that fall on capital goods which are larger. These additional taxes, however, do not change and would not have a significant effect. The estimate also assumes full expensing for inventories although the authors report an estimate with expensing only for machinery and structures of 21.9%. If that rate were used the effect would be 30% smaller.

[41] CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.

[42] A savings elasticity has an uncertain sign because an increase in the rate of return has both an income effect and a

CBO used a 0.2 elasticity. JCT modifies this model by using a life cycle element, but indicates that it produces effects similar to a 0.29 elasticity.

If the growth effects (without counting crowding out) were calculated with the JCT assumptions, using the tax rates under CRS assumptions and CBO assumptions, the effect would be an increase of 0.7% to 1.0%. If CBO assumptions on elasticities were used, the growth effects would be 0.6% to 0.8%. (These estimates assume a unitary factor substitution elasticity, which is a feature of most models, although some empirical evidence suggests the elasticity is lower.)[43] These effects would likely lead to significant output decreases if crowding out were included.

International Issues

A number of important effects on international tax issues arise from the tax change.

Imports and Exports With a Border Tax Adjustment

A true destination-based tax should not discourage imports or favor exports as is sometimes claimed. The import tax initially makes imports less attractive than domestic production, and the export subsidy, that initially permits firms to charge less for exports, makes exports more attractive to foreigners than their home production. These shifts in demand ultimately change demand for imports and exports, leading to changes in the demand and supply of dollars that causes the dollar to appreciate by 25% with a 20% tax rate.[44] This dollar appreciation offsets the effects of the tax, so that U.S. consumers see no change in prices of imported goods, foreign exporters continue to receive the same price and foreigners buy and sell the same amounts for the same prices in their own currency.[45]

Some caveats or objections have been raised about this effect.[46] Perhaps the most important of these is that the export subsidy is not refundable, so that exporters that have loss positions will not be able to use the subsidy. Although loss carryforwards are allowed with interest, these firms may be in a permanent loss position. A recent study that simulated the effect of the border adjustment on firms in loss positions found that, weighted by assets, going to a cash-flow tax without border adjustments caused the fraction of loss firms assets to change very little (remain at around 20%). Adding border adjustments increased the share to, typically, around 40%.[47] Firms with losses will not be able to benefit from the export subsidy and to the extent that the subsidy does not have a value, it will cause the border tax adjustment to act partially as a tariff (and thus discourage imports).

Potential ways for firms to address this inability to use the subsidy include merging with an importer, adding a business as an import broker, or shifting supplies of intermediate goods from

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substitution effect. The income effect allows more consumption in both the present and future, which reduces savings, and the substitution effect causes less consumption in the present and more in the future, which increases saving.

[43] See Jennifer C. Gravelle, *Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis*, Working Paper no. 2010-03, Congressional Budget Office, May 20, 2010, at https://www.cbo.gov/publication/21486.

[44] Note that a tax rate of 20% on a base that includes the tax is 25% on a base that excludes the tax.

[45] See CRS In Focus IF10583, *Border-Adjusted Taxes: A Primer*, by Jane G. Gravelle for an explanation of the mechanisms.

[46] See Alan Auerbach, *Border Adjustment and the Dollar*, AEI Economic Perspectives, February 21, 2017, at https://www.aei.org/publication/border-adjustment-and-the-dollar/ for a response to various criticisms.

[47] Elena Patel and John McClelland, *What Would a Cash flow Tax Look Life for U.S. Companies? Lessons from a Historical Panel*, Department of the Treasury, Office of Tax Analysis, Working Paper no. 116, January 2017, at https://www.treasury.gov/resource-center/tax-policy/tax-analysis/Documents/WP-116.pdf.

domestic to foreign producers. All of these approaches, however, produce some distortions and market inefficiencies, and a better approach from an efficiency perspective might be to allow refundability or to allow the subsidy to be credited against other taxes, such as employer payroll taxes.

Growth and Efficiency

In **Table 5** and **Table 6**, these international considerations include the possibility of attracting more capital from abroad and would suggest perhaps increasing the savings elasticity to account for more investment than that generated by domestic savings, although the upper limit that elasticity is nevertheless infinity. Evidence suggests that the portfolio substitution elasticity is considerably less than infinity and probably around 3.[48] Moreover, because the United States is a large country, the portfolio elasticity will be larger than the supply elasticity, with the latter, approximately 1.8.[49] If that elasticity were used to compute the effects, they would be 1.8% and 2.5% at the top of the range (labor supply elasticity of 0.5 and factor substitution elasticity of 1) and 0.8% and 1.1% at the bottom (labor supply elasticity of 0.1 and factor substitution elasticity of 0.5).[50]

Another reason the inflow of foreign investment might be less than suggested by the estimates, or even be negative, is the likelihood that debt is more mobile internationally than equity. The new system encourages more equity investment, but discourages debt-financed investment. Some studies have suggested that a cut in the corporate rate would decrease the U.S. capital stock because it would discourage debt inflow from abroad.[51]

The effects in the AKK study appear to arise largely, at least initially, from international capital flows and they appear to assign an infinite elasticity (perfect substitution) to equity capital (there does not appear to be debt-finance in their model although the tax rates incorporate it).[52] If equity capital is imperfectly substitutable, and debt more substitutable, their results would be too large and possibly in the wrong direction. Their model also appears to treat all capital in the economy

[48] See Jennifer C. Gravelle, *Corporate Tax Incidence: Review of General Equilibrium Estimates and Analysis*, Working Paper no. 2010-03, Congressional Budget Office, May 20, 2010, at https://www.cbo.gov/publication/21486.

[49] The percentage change in domestic capital minus the percentage change in foreign capital would be three times the percentage change in the after-tax U.S. return. If domestic capital and foreign capital sum to the total capital stock, then the elasticity would be the substitution elasticity multiplied by the foreign capital share of the total capital stock, or around 60%, reducing the elasticity to 1.8.

[50] Effects in an open economy model also depend on the substitutability of products in international trade and the existence of non-tradable sectors. These factors are explored in an international model with multiple sectors and a "rest of the world." See Jane G. Gravelle and Kent A. Smetters, "Does the Open Economy Assumption Really Mean That Labor Bears the Burden of a Capital Income Tax?," *Advances in Economic Analysis & Policy*, vol. 6, issue 1, 2006. This paper was mostly directed at examining the incidence of the tax, but its estimates also included effects on the capital stock. This model had no debt; totally eliminating the corporate tax and assuming perfect portfolio and product substitution elasticities, the estimated effect on the U.S. capital stock was 4.45. Scaling this effect down to reflect the tax rates in the AKK study which did include debt would suggest an increase in the capital stock of 2.6%. But the capital stock has to rise more than the wage rate (since the pre-tax return falls for a large economy), so the wage growth would be less than 2.6%. Using the smaller elasticities of 3 for each would lead to a 1.6% increase, which, adjusted for the lower tax rates, would be less than 1%.

[51] Harry Grubert and John Mutti, "International Aspects of Corporate Tax Integration: The Role of Debt and Equity Flows," *National Tax Journal*, vol. 47, no. 1 (1994), pp. 111-133.

[52] The model indicates a common worldwide after-tax return which is consistent with perfect substitution.

as corporate capital, whereas a large share is from pass-through businesses and owner-occupied housing.[53]

The destination basis of the tax (which is coupled with moving to a territorial tax that does not tax foreign source income) will eliminate some distortions that currently exist due to tax rules affecting international relationships. For example, the current tax discourages repatriation of income earned abroad by foreign subsidiaries because tax is not due when earned, only when returned to the parent firm as a dividend. This effect would no longer exist with a tax that is only imposed based on the place of consumption. The destination basis would also eliminate the incentive for firms to invert (shift their headquarters to another country), which may require a tax induced merger. In addition, it likely would reduce or largely eliminate artificial profit shifting, which is a paper transaction, but requires real resources and possibly some real effects (e.g., setting up a subsidiary operation in a tax haven).

The blueprint will introduce inefficiencies with respect to its border adjustment if the export subsidy is not refundable. For firms in a permanent loss position, tax-motivated changes, such as merging with importers, establishing import brokerage businesses, or substituting foreign for domestic inputs, will introduce distortions motivated by a desire to use loss positions. To the extent these actions are not taken and firms do not receive the subsidy, the proposal will distort trade.

Without the border tax adjustment, the territorial tax will still eliminate the tax on repatriations. The territorial tax, lower rate, and disallowance of interest deductions will reduce, and probably largely eliminate, the incentive for inversions. Profit shifting will be reduced because of the disallowance of interest deductions, but the shifting of profits into low tax countries through the pricing of intangibles, which is a more important method of profit shifting, would be increased with a territorial tax and no border adjustment.

Distributional Issues

Several distributional consequences arise in considering the blueprint. This section discusses four issues: (1) distribution across income classes (vertical equity), (2) horizontal equity (or the treatment of taxpayers with the same abilities to pay), (3) intergenerational distribution (through the cash-flow tax and its effects on assets), and (4) international distribution (through the exchange rate effects of the border tax adjustment on assets).

Distribution Across Income Classes

The measure commonly used for capturing the distributional effects on relative incomes is the percentage change in after-tax income.

The TPC provides distributional analysis for 2017, that indicates the percentage increase in after-tax income is 2.5% overall.[54] The effects across income classes depend on the assumption about the border tax adjustment and exchange rates. With no exchange rate adjustment, which might

[53] As noted in footnote 49, the presence of nontradeable sectors has an effect on capital flows. In the longer run, however, the capital stock in a life cycle model without crowding out would rise through increased saving, even if capital flows were limited, but this effect would occur slowly over time.

[54] Leonard E. Burman et al., "An Analysis of the House GOP Tax Plan," *Columbia Journal of Tax Law*, Vol. 8, 2017, pp. 257-293, at https://taxlaw.journals.cdrs.columbia.edu/wp-content/uploads/sites/10/2017/04/Burman.pdf. For an earlier analysis with slightly different effects, see Jim Nunns et al., *An Analysis of the House GOP Tax Plan*, Urban Institute and Brookings Institution Tax Policy Center, September 16, 2016, at http://www.taxpolicycenter.org/publications/analysis-house-gop-tax-plan.

occur in the short run, the increase in income is 0.4% for the first two quintiles and 0.5% for the next two, and the increase is 4.6% for the top 20%. After-tax income is projected to rise by 13.4% for the top 1% and 16.9% for the top 0.1%. With an exchange rate adjustment, the increase for the first two quintiles and the fourth quintile is 1%, the increase for the third quintile is 1.1%, and the increase for the top quintile is 4%. The increase for the top 1% is 10.8% and the increase for the top 0.1% is 13.1%. With no border tax adjustment, the increase for the first two quintiles is 1.2%, the increase for the third and fourth quintiles is 1.4%, and for the top quintile is 5.5%. The increase for the top 1% is 14.1% and the increase for the top 0.1% is 17.4%.

The Tax Foundation also presents distributional analyses, but with a smaller effect, 0.7% of income. It finds an increase of from 0.2% to 0.5% for the bottom 80% and 1% for the top 20%. The top 10% has an increase of 1.5% and the top 1% an increase of 5.3%.[55]

The overall increase in income is more than three times as large in the TPC analysis for 2017 and more than twice as large in 2025 compared with the Tax Foundation estimates. One difference between the two calculations is that the TPC analysis includes the repeal of the taxes in the Affordable Care Act, whereas the Tax Foundation does not. Because these taxes tend to grow more rapidly in the future, the revenue cost of repealing them accounts for a growing share of the total cost: 9% in 2017, 24% in 2021, 26% in the first 10 years, and 64% in the second 10 years.

Both analyses, however, show a general pattern of favoring higher-income individuals, probably largely because of the reductions in business and corporate taxes.

The Tax Foundation also provides a distributional analysis after the growth effects are incorporated with much larger and more even benefits. Aside from issues as to whether these increases could be as large as projected (particularly using an infinite savings elasticity, measuring a tax rate change that appears to be too large, and not allowing for crowding out), the sources of growth come at a cost. For example, the individual who increased savings reduced consumption to do so, and the benefit of the policy should capture what is lost and what is gained. Similarly, the worker who increases work effort is giving up unpaid work or leisure. That said, if the capital stock grows disproportionally, there will be some benefit accruing to lower-income workers because of capital deepening. The opposite would occur if capital declines, as suggested would eventually be the case, by the TPC's analysis.

The AKK study provides a distributional analysis but, reflecting the life cycle nature of the model, provides distributional effects for lifetime spending and net wealth for the 40-49 age cohort.[56] Its analysis indicates that the shares are essentially the same under the plan. The study also examines shares after the growth effects are incorporated and finds the distribution, again, essentially the same.

Horizontal Equity

Horizontal equity addresses the relative tax treatment of taxpayers with the same ability to pay who differ in other respects. The most important way that most taxpayers with the same ability to pay could experience different tax rates is family composition. Some families are headed by a married couple and some by a single individual. Taxpayers differ in the number, if any, of

[55] Kyle Pomerleau, *Details and Analysis of the 2016 House Republican Tax Plan*, Fiscal Fact no. 516, July 5, 2016, Tax Foundation, at https://taxfoundation.org/details-and-analysis-2016-house-republican-tax-reform-plan.

[56] Auerbach, Alan, Laurence Kotlikoff, and Darryl Koehler, "Assessing the House Republicans' 'A Better Way' Tax Reform," May 1, 2017, at http://eml.berkeley.edu/~auerbach/Assessing%20the%20House%20Republican%20Tax%20Reform%20Plan%205-3-17.pdf.

children. Differential tax rates can also apply to couples that live together with or without being married (the marriage penalty or bonus). Current law treatment of both these cases is addressed in a recent CRS report, and these rates are compared with the proposed treatment in the blueprint.[57] Finally, individuals can differ in their ability to pay because of circumstances, such as large medical expenses.

Tax Treatment of Families of Different Size and Composition

To examine the first horizontal equity issue, the effective tax rates arising from current and proposed structural elements of the tax system are compared across family types. These structural features include the rate structure, personal exemptions, child credits, standard deductions, itemized deductions and the alternative minimum tax. The comparison does not reflect the differential treatment of capital and labor income, although outside of high-income families, most taxpayers have relatively small shares of capital income.

To make the comparisons, families that have an equal ability to pay are assigned an income required to match the reference income (that of a married couple without children) through an equivalency index. This index accounts for the ability of families to enjoy economies of scale (such as sharing kitchens and bathrooms) and for the size and nature (adults or children) of the family. The economy of scale issue means that although two people need more income than one person to achieve the same standard of living, they do not need twice as much income.[58]

Table 7 shows the effective average income tax rates for lower-and middle-income levels under current law and the blueprint. The table shows within one income level single, joint (headed by a married couple), and head of household (headed by a single parent with children) returns. The blueprint does not have an effect on the lowest income levels because these returns do not have positive tax liability and are not affected by the changes in nonrefundable provisions. At all of these income levels, there is some favoritism in current law for families with children, due to the earned income credit and the child credit, with the most generous treatment for families with two or three children. That favorable treatment becomes relatively small at the $25,000-income level and virtually disappears by the $50,000-income level. The blueprint generally maintains this pattern.

[57] See CRS Report RL33755, *Federal Income Tax Treatment of the Family*, by Jane G. Gravelle.

[58] The equivalency formula used was $(A+0.7K)^{0.7}$, where A is the number of adults and K is the number of children, based on Constance F. Citro and Robert T. Michael, *Measuring Poverty: A New Approach* (Washington, DC: National Academy Press, 1995). Using this formula, a single person would need 62% of the income of a married couple without children to achieve the same standard of income. A married couple with one child would need 23% more, and a married couple with two children would need 45% more.

Table 7. Average Effective Income Tax Rates, by Type of Return, Family Size, and Income: Lower and Middle Incomes Under Current Law and Blueprint

(2016 tax law and income levels)

Type–Size	Income Level for Married Couple Without Children (Joint–2)					
	$10,000	$15,000	$25,000	$25,000 (Blueprint)	$50,000	$50,000 (Blueprint)
Single–1	-7.7%	-4.6%	3.3%	-1.3	8.4%	7.3
Joint–2	-7.7	-2.8	1.7	0.0	6.9	6.2
Joint–3	-35.4	-23.6	-8.5	-9.4	5.9	4.9
Joint–4	-50.3	-34.8	-11.6	-12.3	5.0	3.9
Joint–5	-50.2	-36.5	-9.7	-10.4	4.3	3.1
Joint–6	-46.5	-33.0	-8.5	-9.1	3.7	2.4
Joint–7	-43.6	-29.5	-7.9	-8.5	3.0	-3.0
H/H–2	-47.8	-32.7	-14.1	-16.6	5.4	3.8
H/H–3	-51.0	-44.4	-16.6	-18.2	4.6	2.9
H/H–4	-56.7	-41.3	-15.0	-16.3	3.8	2.2
H/H–5	-52.1	-35.0	-12.5	-13.5	3.1	3.5
H/H–6	-48.0	-30.4	-10.8	-11.7	3.0	4.7
H/H–7	-44.8	-26.9	-10.0	-10.9	4.1	5.6

Source: CRS calculations.

Note: The dollar amounts refer to the income for a married couple with no children; larger families in each column would have more income, and singles and heads of household with two family members (one child) would have less income.

Table 8 and **Table 9** show the effective tax rates on higher incomes. (Tax rates that reflect payment of the alternative minimum tax are bolded.) Under current law, at middle and higher incomes, tax rates become more even across family size, although at higher-income levels families with children are taxed more heavily. This effect occurs because the allowances for children are either phased out or are not large enough relative to income to make the adjustments for large families. This pattern is largely continued under the blueprint because the basic structure of the current system is retained.

Table 8. Average Effective Income Tax Rates, by Type of Return, Family Size, and Income: Higher Incomes Under Current Law

(2016 tax law and income levels)

Type–Size	Income Level for a Married Couple Without Children (Joint–2)			
	$75,000	**$100,000**	**$250,000**	**$500,000**
Single–1	10.4%	12.7%	**18.5%**	**22.8%**
Joint–2	9.6	10.8	17.7	**24.2**
Joint–3	8.7	11.7	**18.8**	25.4
Joint–4	7.9	12.5	**20.4**	26.8
Joint–5	8.5	12.9	**22.5**	27.8
Joint–6	8.8	13.2	**23.5**	28.5
Joint–7	9.1	13.4	**24.3**	29.1
H/H–2	8.5	12.4	**19.5**	**24.5**
H/H–3	9.3	13.5	**21.9**	25.7
H/H–4	10.1	14.1	**23.7**	27.2
H/H–5	10.0	**15.3**	**24.7**	28.2
H/H–6	**12.4**	**16.9**	**25.6**	29.0
H/H–7	**12.7**	**18.1**	**26.2**	29.5

Source: CRS calculations.

Note: The dollar amounts refer to the income for a married couple with no children; larger families in each column would have more income, and singles and heads of household with two family members (one child) would have less income. Tax rates in bold reflect payment of the alternative minimum tax.

Table 9. Average Effective Income Tax Rates by Type of Return, Family Size, and Income: Higher Incomes Under Blueprint

(2016 tax law and income levels)

Type–Size	Income Level for a Married Couple Without Children (Joint–2)			
	$75,000	$100,000	$250,000	$500,000
Single–1	8.9%	12.2%	19.3%	23.2%
Joint–2	8.2	9.2	18.6	24.0
Joint–3	7.3	11.0	20.5	25.1
Joint–4	7.7	12.0	20.4	24.7
Joint–5	8.6	13.2	22.8	26.3
Joint–6	9.3	14.1	23.6	26.6
Joint–7	9.7	14.8	24.3	29.8
H/H–2	6.5	11.7	19.5	24.6
H/H–3	9.6	14.3	21.5	25.6
H/H–4	11.1	15.8	22.8	26.3
H/H–5	12.3	16.7	23.7	26.7
H/H–6	13.1	17.4	24.4	27.1
H/H–7	15.2	18.9	26.2	30.3

Source: CRS calculations.

Note: The dollar amounts refer to the income for a married couple with no children; larger families in each column would have more income, and singles and heads of household with two family members (one child) would have less income.

The Marriage Penalty or Bonus

A second horizontal equity issue concerns the treatment of couples who live together with and without marriage. Married couples file a joint tax return and couples that live together each file a single return if there are no children. If there are children, one taxpayer can file a head of household return and the other a single return. These choices can produce either a marriage penalty or a marriage bonus, depending on the income splits, income levels, and family circumstances. As shown in **Table 10** and **Table 11** for families without children, either penalties or bonuses can occur. Penalties can arise at low-income levels because of phase outs, particularly in the earned income credit. (Tax rates arising from the alternative minimum tax are bolded). No marriage penalties occur in the middle incomes because the rate brackets, standard deductions, and personal exemptions are twice those in a single return. Marriage bonuses arise when income is unevenly divided, although penalties can occur due to the earned income credit. Tax rates vary more widely when children are involved, and at low income levels an unmarried partner who is the primary earner but does not have custody can pay significantly higher taxes. As shown in **Table 12** and **Table 13**, these basic patterns are retained in the blueprint. As in the case of the basic horizontal equity issues, the structural elements are not that different from current law, with larger standard deductions offsetting the loss of itemized deductions, the new child and dependent credit largely replacing the personal exemption, and the limits on itemized deductions offsetting the flattening of the rate structure.

Table 10. Average Effective Income Tax Rates for Joint Returns and Unmarried Couples, by Size of Income and Degree of Split: Lower and Middle Incomes Under Current Law

(2016 income levels)

Type–Size	Income Level for Married Couple			
	$10,000	$15,000	$25,000	$50,000
No Child				
Joint	-7.7%	-2.8%	1.7%	6.9%
Single 50/50 Split	-7.7	-6.7	0.2	6.9
Single 100/0 Split	-5.1	3.1	6.9	10.8
One Child				
Joint	-35.4	-23.6	-0.7	6.6
50/50 Split, One Single, One Head of Household	-24.8	-25.6	-12.5	1.3
100/0 Split, Single Return	1.6	4.4	8.5	12.8
100/0 Split, Head-of-Household Return	-35.4	-22.8	3.3	8.1

Source: CRS calculations.

Table 11. Average Effective Income Tax Rates for Joint Returns and Unmarried Couples, by Size of Income and Degree of Split: Higher Incomes, Under Current Law

(2016 income levels)

Type–Size	Income Level for Married Couple			
	$75,000	$100,000	$250,000	$500,000
No Child				
Joint	9.6%	10.8%	17.1%	**24.2%**
Single 50/50 Split	9.6	10.8	17.3	20.9
Single 100/0 Split	14.3	16.0	20.9	24.7
One Child				
Joint	8.7	11.7	**18.8**	25.4
50/50 Split, One Single, One Head of Household	7.2	8.9	17.4	**22.4**
100/0 Split, Single Return	15.6	17.2	22.6	27.2
100/0 Split, Head-of-Household Return	12.1	14.6	**22.2**	25.4

Source: CRS calculations.

Notes: Effective tax rate does not always rise across incomes due to rounding. Tax rates in bold reflect payment of the alternative minimum tax.

Table 12. Average Effective Income Tax Rates for Joint Returns and Unmarried Couples, by Size of Income and Degree of Split: Lower and Middle Incomes Under Blueprint

(2016 income levels)

Type–Size	Income Level for Married Couple			
	$10,000	$15,000	$25,000	$50,000
No Child				
Joint	-7.7%	-2.8%	0.0%	6.2%
Single 50/50 Split	-7.7	-6.7	0.6	6.2
Single 100/0 Split	-5.1	2.4	6.2	9.2
One Child				
Joint	-35.4	-23.6	-9.4	4.9
50/50 Split, One Single, One Head of Household	-24.8	-25.6	-12.8	1.5
100/0 Split, Single Return	1.6	4.4	7.3	12.2
100/0 Split, Head-of-Household Return	-35.4	-22.8	-4.2	6.1

Source: CRS calculations.

Table 13. Average Effective Income Tax Rates for Joint Returns and Unmarried Couples, by Size of Income and Degree of Split: Higher Incomes Under Blueprint

(2016 income levels)

Type–Size	Income Level for Married Couple			
	$75,000	$100,000	$250,000	$500,000
No Child				
Joint	8.2%	9.2%	18.6%	24.0%
Single 50/50 Split	8.2	9.2	18.6	24.0
Single 100/0 Split	14.5	17.1	21.7	25.6
One Child				
Joint	7.3	11.0	20.5	25.1
50/50 Split, One Single, One Head of Household	5.8	8.6	18.6	21.5
100/0 Split, Single Return	16.5	18.6	23.2	26.4
100/0 Split, Head-of-Household Return	12.4	16.0	19.9	25.1

Source: CRS calculations.

Note: Effective tax rate does not always rise across incomes due to rounding.

Other Aspects of Tax Changes Reflecting Horizontal Equity

Some features of the current tax law recognize that certain costs may have differential effects on ability to pay. One of these is allowing an itemized deduction for extraordinary medical expenses (i.e., expenses over 10% of income). Unlike most itemized deductions, these deductions are much

more concentrated at lower and moderate income levels, in part because lower and moderate income individuals are less likely to have health insurance.

Similarly, individuals deduct casualty losses as an itemized deduction and individuals with large losses in property have lost income (in the value of the return on their property), which would affect their ability to pay. The casualty loss is also allowed in excess of a percentage of income.

Some itemized deductions are appropriate to the measurement of income and are included as itemized deductions as a simplification. These deductions include investment costs and employee expenses. In the case of professional gamblers, gambling losses are a cost of earnings income.

Some of these issues may be addressed in the final proposal.

Inter-Generational Distributional Effects: A Cash-Flow Tax as an Existing-Assets Tax

Economists recognize that the incidence of a consumption tax, whether a retail sales tax, a value-added tax, or a flat tax (i.e., a flat rate tax imposed on wage earners and the same rate imposed as a cash-flow tax on businesses), falls on wages and asset values. By contrast, the income tax falls on wages and investment income. If a cash-flow tax is substituted for the corporate tax, as a separate move, the tax would fall on assets. These issues are outlined in numerous sources.[59] That means there is an inter-generational distributional aspect to the cash-flow tax because it is a one-time tax that falls on the generation alive at the time (although some of the burden may be shared with future generations through inheritance). Returns to investment going forward are not subject to tax, except in the case of economic rents (i.e., returns in excess of the amount needed to attract investment).

Which asset holders bear the burden for debt-financed investment depends on whether there is a general price rise (which requires an expansion of the money supply). For example, with a retail sales tax or a value-added tax, such a price rise might be desirable, so that the price of consumption goods rises while wages and asset values do not change. In this case, although these values do not change, their purchasing power falls, which is equivalent to a fall in asset value. If the tax is enacted in a way that does not require a price increase (such as a flat tax or a separate cash-flow tax) or a price rise is not accommodated, debt will retain its value, and the fall in the value of equity-owned assets is larger. For example, if a firm has a third of its assets debt

[59] See JCT, *Methodology and Issues in Measuring Changes In The Distribution of Tax Burdens*, JCS-7-93, June 14, 1993, at https://www.jct.gov/publications.html?func=startdown&id=2857 and CRS Report, 95-1141E, *The Flat Tax and Other Proposals: Who Will Bear the Tax Burden*? by Jane G. Gravelle (out-of-print report; available to congressional clients from the author upon request). The report is reprinted in *The Kemp Commission Recommendations: A Small Business Perspective*, hearing before the House Small Business Committee, Serial 104-72, 104th Cong., 2nd sess., April 17, 1996 (Washington DC: GPO, 1996). The issue of stock market prices with a move to a consumption tax is discussed in a major work on dynamic effects on the economy of switching from an income to a consumption tax. See Alan J. Auerbach and Laurence J. Kotlikoff, *Dynamic Fiscal Policy* (New York: Cambridge University Press, 1987). This book modeled a flat tax on capital income of 15%. See the section, Adjustment Costs, Investment and Stock Market Values. Also using this model is David Altig et al., "Simulating Fundamental Tax Reform in the United States," *The American Economic Review*, vol. 91, no. 3 (June 2001), pp. 574-595. For a review of the literature in general up to that point, see George Zodrow, "Transitional Issues in Tax Reform," in *United States Tax Reform in the 21st Century*, eds. George D. Zodrow and Peter Mieszkowski (New York: Cambridge University Press, 2002). Finally two sources that are available online are Alan J. Auerbach, *The Choice between Income and Consumption Taxes: A Primer*, University of California, Berkeley, and NBER, May 6, 2006, at http://eml.berkeley.edu/~auerbach/consumption.pdf, and C. Alan Garner, "Consumption Taxes: Macroeconomic Effects and Policy Issues," *Economic Review*, Kansas City Federal Reserve Bank, 2nd Quarter 2005, at https://www.kansascityfed.org/PUBLICAT/ECONREV/PDF/2Q05garn.pdf.

financed, the stock market values would fall by 50% (one-third divided by two-thirds) more than their effective fall when prices change. That is, equity owners bear the full burden of the asset tax.

Perhaps the best intuition behind the expectation that stock market prices would fall is that a new investment has a higher return than the old investments because it has a subsidy. Therefore, a new investment (such as a new issue of stock) is more attractive than existing investments. To make individuals, who could purchase a new investment with a higher return, willing to purchase existing shares, the price of existing stocks must fall so as to match the return on new issues.

A fall in asset prices is not confined to the wealthy, although stock held by individuals is concentrated among high-income individuals. As noted earlier, about half of the stocks in U.S. firms is held by nontaxable shareholders, largely in retirement accounts (about 5% is held by charitable and other nonprofit organizations, such as university endowments).

Note that the fall in the value of assets would not be recouped as in the case of normal market fluctuations: it would be permanent, although as time goes on more of the stock market would be owned by younger generations who would increasingly have purchased stock at a discount and therefore, increasingly do not bear the burden of the tax (although even after all individuals alive have died, some burden will remain because of inheritances).

If the current income tax were fully an income tax, and the new tax proposal applied its cash-flow effects to all purchases, then the estimated fall in the stock market would be relatively straightforward. However, the current income tax contains significant aspects of a cash-flow tax through accelerated depreciation and expensing of intangibles. Thus it already has discounted prices. In addition, the new cash-flow tax system excludes land purchases from expensing and it is not clear whether inventories would be excluded.

The formula for estimating the existing estimates of accelerated depreciation and expensing is shown in the **Appendix**. Based on the asset data and tax model used in previous CRS reports[60] and data (particularly on land and inventories) in a recent CBO study,[61] the estimated 12% discount, before adjusting for debt, in the current stock market is due to consumption tax elements of the current income tax. About half that effect is due to the expensing of intangible investments, including research and development, advertising, and human capital investment; the remainder is due to accelerated depreciation. The discount estimated for a 20% cash- flow tax that does not apply to land or inventories is estimated at 15.4% (with somewhat less than a quarter of assets in investments that do not qualify). The differences between the two numbers, adjusted to reflect debt and the existing stock market value, ranges from 5.9% to 6.2% (depending on the debt share). Some ambiguity exists regarding the treatment of inventories. If inventories were allowed to be expensed, the estimates would be 8.6% to 9.0%. If a true cash-flow tax were chosen, which would also apply to land, the estimated effects would be 16.9% to 17.3%.

These estimates have many caveats. The proposed cash-flow tax is a destination-based tax rather than an origin-based one, and it is unclear how this rule would affect the estimates. Although all estimates are subject to uncertainty, estimating intangible assets, particularly for human capital investment, which accounts for about half of intangibles, is especially uncertain. The estimates of the existing discounts assume uniform debt shares and growth rates across assets. The proposal is unclear on transition rules that allow depreciation on existing assets, which would reduce the

[60] CRS Report R44242, *The Effect of Base-Broadening Measures on Labor Supply and Investment: Considerations for Tax Reform*, by Jane G. Gravelle and Donald J. Marples and CRS Report R44638, *Corporate Tax Integration and Tax Reform*, by Jane G. Gravelle.

[61] See CBO, Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options, December 2014, at https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/49817-Taxing_Capital_Income_0.pdf.

discount (although values would eventually fall to the permanent levels as deductions were taken).

One important implication of this burden of a cash-flow tax is that proposals to increase the tax rate above 20% to address revenue shortfalls (because there would be little effect on real investment in plant and equipment) would increase the discount. With the exclusion of land and inventories reducing the discount to about three quarters, but debt increasing it by 1.125% for each percentage point. Thus increasing it to 25% would increase the discount by 5.6%, increasing it to 30% would increase the discount by 11.3% and leaving it at the current statutory rate would increase it by 16.9%.

Effects on Distribution of Border Tax Adjustments: Dollar Appreciation and Trade Deficits

A final set of distributional effects could arise from the border tax adjustments. The first effect is from the dollar appreciation expected from the border adjustments. Because foreign currency would experience a decline in its power to purchase American goods or dollar denominated assets, U.S. holders of foreign assets would lose value, whereas foreign holders of U.S. assets would gain value. Those with debt denominated in U.S. dollars, including many third-world countries, find that their debt obligation has increased in terms of their own currency. One study estimated that U.S. holders of foreign assets could lose as much as $4.9 trillion, and foreign holders of U.S. assets could gain as much as $8.1 trillion.[62] (These measures assumed the full export subsidy would be allowed and thus the full exchange rate adjustment would occur.)

These distributional effects also suggest that to increase the tax rate from 20% to achieve revenue neutrality would exacerbate the exchange rate adjustment and the shifts in asset values. For example, raising the rate to 25% would lead to a dollar appreciation of 33%, over 30% larger that at a 20% rate.[63] A 30% rate would lead to a 43% appreciation in the dollar and retaining the rate at the current 35% rate would lead to a 54% appreciation.

The current trade deficit means that the border adjustment leads to a larger tax base, projected to raise more than a trillion dollars in the next 10 years. There appears to be no one bearing the burden of that additional tax, because U.S. consumers and producers have taxes offset by exchange rates and foreign producers and consumers buy and sell at the same level in their own currencies. These additional tax revenues are, in effect, loans from the rest of the world, because the country cannot perpetually have trade deficits. The trade balance must be zero in present value throughout a country's history and thus trade surpluses will occur in future years with tax revenues lost due to the border adjustment.[64]

[62] Michael J. Graetz, *The Known Unknowns of Business Tax Reforms Proposed in the House Republican Blueprint*, Columbia Law and Economics Working Paper no. 557, February 21, 2017, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2910569##.

[63] The rate of appreciation in the dollar is equal to t/(1-t) where t is the tax rate. The Blueprint tax rate is stated as a tax exclusive rate, that is, the tax as a percentage of income inclusive of the tax. VATs and sales taxes are normally stated as tax exclusive rates, a percentage of the sale price excluding the tax. A 20% tax inclusive rate is a 25% tax exclusive rate.

[64] This point is made by Alan Viard, "The Economic Effects of Border Adjustments," *Tax Notes* (February 20, 2017), pp. 1029-1030, at http://pdfs.taxnotes.com/tnpdf/2017/154tn1029.pdf.

Revenue Effects

The TPC, Tax Foundation, and AKK have estimated the blueprint's revenue effects, although the TPC included repeal of the Affordable Care Act taxes and the Tax Foundation and AKK did not. AKK also excluded the effects of the estate tax. These revenue losses are significant. All three studies also reported effects after macroeconomic feedback.

None of the revenue estimates reflects the elimination of the border adjustment, which is estimated to add $1.2 trillion to the ten year cost.[65]

The TPC estimates a revenue loss of $3,100.9 billion for the first 10 years and $2,225.6 billion for the second 10 years. If the Affordable Care Act taxes are excluded, the cost is $2,297.6 billion in the first 10 years and $795.6 billion in the second 10 years. (The repeal of these taxes cost $803.1 billion in the first 10 years and $1,430.0 billion in the second 10 years.)

Of these, the individual income tax costs are $1,219.0 billion in first 10 years and $303.9 billion in second 10 years, or less than half. Structural elements (rates, standard deduction, itemized deductions, personal exemptions, child and dependent credits, and alternative minimum tax) are close to revenue neutral, losing $95.9 billion in first 10 years but gaining $202.4 billion in the second 10 years. These results are consistent with the findings of limited changes from current law in the previous section on distribution and horizontal equity. Most of the losses on the individual side are from the treatment of business and investment income. The maximum tax rate on business income and expensing plus the disallowance of net interest deductions loses $1,050.3 billion in first 10 years and $221.9 billion in the second 10 years. The timing difference reflects the pattern of expensing whose revenue loss (assuming depreciation on existing assets is continued) loses significant revenue initially and then a smaller amount over time, plus the disallowance of net interest deductions, which gains more revenue over time as more loans are covered. The more generous treatment of capital gains, dividends, and interest results in losses of $497.8 billion in the first 10 years and $848.6 billion in the second 10 years. TPC also includes other tax expenditures assumed at a gain of $385.2 billion in the first 10 years and $515.7 billion in the second 10 years.

Corporate revenue losses are $890.7 billion in the first 10 years and $192.5 billion in the in second 10 years. As with the case of business income, the significant decline in revenue loss over the two periods is due to the pattern of expensing and disallowance of net interest deductions. There is also a small offset from the deemed repatriation of foreign source income; without that one-time gain, the loss in the first 10 years would be $1,062.4 billion. The border adjustment accounts for a significant offset to loses, gaining $1,179.6 billion in the first 10 years and $1,689.3 billion in the second 10 years.

The estate and gift tax repeal costs $187.4 billion in the first 10 years and $299.1 billion in the second 10 years.

The Tax Foundation estimated a revenue loss of $2,418 billion in the first 10 years, with $981 billion from the individual income tax, $1,197 billion in corporate income taxes, and $240 billion in estate and gift taxes. The Tax Foundation also finds the structural change in the individual income tax change to be roughly revenue neutral, losing $104 billion in the first 10 years, thus

[65] Ann Harrison and Michael Knoll, Weighting the Impact of a U.S. Border Adjustment Tax, Wharton School, University of Pennsylvania, February 23, 2017, http://knowledge.wharton.upenn.edu/article/the-impact-of-a-border-adjustment-tax/.

also indicating that most of the revenue loss from the individual taxes arises from the treatment of business and investment incomes.

AKK estimate a loss of $212 billion annually without identifying a time period. The estimate do not include the Affordable Care Act taxes or transition effects (such as the cost of depreciating old capital and the allowance of interest deductions on existing debt), although it appears that the model does not include debt. The estate tax repeal is also not included in the model. The AKK model does not appear to have other forms of capital, such as that of unincorporated businesses and owner-occupied housing.

For a dynamic score, the TPC's Keynesian/neoclassical growth model shows a negligible change in revenue cost in the first 10 years from economic feedback effects and a 21% increase in the second 10 years, whereas the life cycle model shows a 2% offset in the first 10 years and a revenue loss that is 51.5% larger than the static loss in the second 10 years. The Tax Foundation finds a 92% offset. AKK find a revenue gain of $38 million annually and thus a revenue offset of 118%, although they once again stress that these estimates appear to represent an upper bound on wage growth.

Note that the TPC's estimate, although it includes the effects of crowding out, does not include the much larger costs of interest payments on the debt. The Tax Foundation's estimate reflects neither.

The revenue shortfalls, likely to be significant because the Tax Foundation's estimate reflects large supply side and tax rate effects and no crowding out, are a major challenge for the tax reform proposals, given the already unsustainable nature of the debt. The revenue losses would be more serious in the short run without the border tax adjustment, although, as noted above, this revenue could be thought of as a loan and not affect the longer-term burdens of the revenue shortfall.

Administrative Issues

Many elements of the blueprint could produce simplification in tax administration and compliance. On the individual income tax side, the reduction in the share of taxpayers who itemize will be the major simplification, eliminating the need to keep records (particularly with charitable deductions), although there are potential simplifications if education and retirement benefits are consolidated. The repeal of the estate and gift taxes would end tax planning surrounding those taxes.

The cash-flow treatment will simplify business accounting by eliminating the need to depreciate assets, although transition rules could extend the period that depreciation must be calculated. Firms would no longer need international tax planning to shift profits from U.S. jurisdictions into tax havens with low or no taxes because disallowance of net interest deductions would remove earnings stripping through leveraging and the destination-based treatment would remove profit shifting through transfer pricing. U.S. firms would no longer be interested in moving their headquarters for tax reasons, and thus no longer engage inefficient mergers to do so. Without the border adjustment, however, profit shifting would be reduced by the lower-tax rate and disallowance of interest deductions, but increased when using the more important source of profit shifting, transfers of intangibles, due to a territorial tax. With a territorial tax, profits shifted out of the United States under a production-based tax would have a larger benefit because they would never be taxed. Incentives to invert would be reduced substantially, but not entirely eliminated.

Although the blueprint introduces some significant simplification, new administrative costs and complexities arise. A full exploration of these issues is beyond the scope of this report; however,

the following are the main issues that have been under discussion.[66] Many of them relate to the border adjustment and would no longer be of concern without that adjustment.

Incentives to Recharacterize Labor Income of Pass-Throughs as Capital Income

Because the business income of taxpayers in the new 33% bracket is granted a lower rate (25%), the incentive (which already exists) to characterize labor income as capital income will be increased. The incentive currently exists because labor income is subject to the payroll tax, even for high-income individuals above the Social Security tax threshold in which the Medicare tax on labor income applies.[67] All income of sole proprietorships and general partners is considered labor income subject to payroll tax.

The lower rate will further encourage the recharacterization of income as capital rather than labor income. Moreover, to apply the lower capital income tax rate across the board, sole proprietors would have to allocate income between capital and labor, at least for purposes of the maximum income tax rate.

An option that would also raise revenue would be to eliminate the 25% cap on tax rates. That elimination would exacerbate the distortion in entity choice (which already exists to a limited degree in the current law, where the top individual rate is 39.6% and the top corporate rate is 35%), leaving a 13 percentage-point spread (rather than a five-percentage point spread) between the rates.

Addressing Exporters' Losses with a Border Adjustment

Exporters, whose deductions for export sales along with costs that lead them into a permanent loss position, would need to undertake potentially costly and complicated mechanisms to take advantage of these losses. The options include merger with importing firms, acquiring a separate business as an import broker, shifting supply sources from domestic production to imports, and engaging in leasing to delay the timing of deductions for investments or the loss of the value of expensing.

It is possible to avoid the problem by refunding taxes that would be the case for a normal consumption tax. Alternatively, the burden could be reduced by refunding the tax against the employer payroll tax or, actually enacting a standard value-added tax and combining it with a set of income tax subsidies and surcharges to achieve an identical outcome.

Taxing Imports That Are Direct Business-to-Consumer Sales with a Border Adjustment

Although the import tax can be imposed by disallowing the import cost deduction, taxing direct business-to-customer sales is more complex. This issue is also a challenge for the value-added tax, particularly in the digital economy where the policing of digital goods is especially complex. Basically there are two approaches, neither entirely successful. One is to require customers to pay

[66] See, for example, Martin J. Sullivan, "Good and Bad Tax Planning Under the House Blueprint," *Tax Notes* (March 13, 2017), pp.1322-1324.

[67] A tax adopted in the 2010 health reform imposed a tax equal to the Medicare tax on labor income, but this applied only to passive income of partnerships and Subchapter S firms.

the tax, which has been the case with state sales taxes in which the seller did not have nexus (or a direct connection to the state through a permanent establishment). Compliance with such an approach is poor. The alternative is to require remote sellers to withhold the tax. This approach is also problematic as there is no way to compel a seller out of one's jurisdiction to collect taxes. This is, nevertheless, the approach recommend by the Organisation for Economic Co-operation and Development's (OECD's) project on base erosion and profit shifting.[68] This option might work better because large-scale well-known firms have a reputational value in being tax compliant.

To the extent that the tax is not complied with, there is a further incentive for U.S. producers to avoid the tax. For example, U.S. producers could sell to affiliates abroad (deducting the exports) who could then resell back into the United States. This issue is particularly a problem with sales of intangible goods, such as computer software, e-books, and music downloads.

Substituting Interest Payments for Sales Price with a Border Adjustment

For sales to consumers, firms can substitute higher interest payments for sales prices. For a firm with net interest, additional interest income does not increase tax liability but additional sales does. To prevent abuse, interest rates for these sales would have to be regulated and enforced. Similarly, because net interest payments are no longer deductible, firms subject to tax may prefer to substitute deductible costs where possible for interest payments.

Overstating Exports and Understating Imports with a Border Adjustment

These problems arise because the system would apply to intangibles, which are more difficult to police than tangible goods and because administration of the tax relies on accounting entries rather than actual tracking of tangible goods as is the case in a credit invoice value-added tax.

New Tax Planning Possibilities with a Border Adjustment

An example of the potential type of tax planning that might occur centers around the exemption of the export of intangibles combined with a territorial tax system.[69] A U.S. parent company invests in research (deducted as a cost) to develop technology for an electronic device; it sells the technology (as an exempt export) to its manufacturing subsidiary in a low-tax country. The subsidiary manufactures for the U.S. and foreign markets. With sales, the technology increases in value and the subsidiary distributes the rights back to the parent, which would be treated as a nontaxable dividend, and the parent now receives a royalty from the foreign subsidiary, which would be exempt as export income.

This potential exclusion of income from intellectual property, including royalties embedded in the value of devices sold back into the United States, could occur given the lack of clear principles about how to treat intangibles under a destination principle tax. It also illustrates the unexplored waters of a new and untried type of tax system.

[68] BEPS Final Reports, Action 1, Addressing the Tax Challenges of the Digital Economy, OECD, 2015, at http://www.oecd.org/tax/beps-2015-final-reports.htm.

[69] This illustration was suggested by Stephen Shay, a tax professor at Harvard University Law School.

Other Issues

Several other issues may be of concern to policymakers and are briefly highlighted below.

Consequences for International Agreements: The WTO and Bilateral Tax Treaties with a Border Adjustment

The blueprint's border adjustments may be found to be illegal tariffs and export subsidies by the World Trade Organization (WTO). This determination is largely a legal matter which, according to some experts, is unlikely to be influenced by economic issues. Thus, although economic analysis indicates that as long as both the taxation of imports and exclusion of exports occur at the same rate, border adjustments do not influence trade, this point may not be taken into consideration. Even if it were, the lack of refundability of export subsidies could bring this issue into question. Most lawyers considering this issue appear to believe that the border adjustments will not be legal, especially the tax imposed on imports by disallowing deductions.[70]

Similarly, there are issues about the new tax coverage under the existing income tax treaties. If the tax is treated as an income tax and thus falls under these treaties' rules, it would violate income tax treaties. One of those violations would be imposing an import tax on sellers without a permanent establishment in the United States, which is not allowed under current treaties.[71]

Although the issues as to whether the tax complies with WTO and tax treaties are legal, the consequences would be economic. If the WTO rules are violated there would need to be major changes to the tax law (either abandoning destination basis or converting the tax into a true value-added tax)[72] or being subject to penalties, such as countervailing duties.[73]

Issues for State and Local Governments

Changing to a different basis of taxation would present issues for state and local income tax systems and their enforcement. Most states use the federal income tax as the base for their own taxes. For businesses, the movement to expensing would require states to either adopt the same rules or make numerous adjustments to require depreciation and interest deductions, to allow deductions for imports, and deny exclusion of export revenues. Enforcement would become more difficult.

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[70] A former Appellate Judge for the World Trade Organization (WTO) makes this observation. See Jennifer Hillman, "Why the Ryan-Brady Tax Proposal Will be Found to be Inconsistent with WTO Law," Institute of International Economic Law, Georgetown Law, Issue Brief, March, 2017, at http://iielaw.org/wp-content/uploads/2015/08/Hillman-IIEL-Policy-Brief-on-BTAs-and-Ryan-Brady-Tax-Plan.pdf. Legal specialists in taxation also view the adjustments as not compliant with WTO. See also Reuven S. Avi-Yonah, "Back to 1913? The Ryan-Brady Blueprint and Its Problems," *Tax Notes* (December 12, 2016), pp. 1367-1374 (a version of this article can be found at http://repository.law.umich.edu/cgi/viewcontent.cgi?article=2820&context=articles); Michael J. Graetz, *The Known Unknowns of Business Tax Reforms Proposed in the House Republican Blueprint*, Columbia Law and Economics Working Paper no. 557, February 21, 2017, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2910569##; Wolfgang Schoen, *Destination–Based Income Taxation and WTO Law: A Note*, Max Planck Institute for Tax Law and Public Finance, Working Paper no. 2016-3.

[71] The treaty issue is discussed in the articles by Avi-Yonah and Graetz, ibid.

[72] Because taxes on wages and subsidies in and of themselves have no WTO consequences, the system could be converted into a value-added tax with wages not deductible and with a set of refundable income tax credits (for those with a tax below 20%) and income tax surcharges.

[73] CRS Report RS20088, *Dispute Settlement in the World Trade Organization (WTO): An Overview*, by Daniel T. Shedd, Brandon J. Murrill, and Jane M. Smith.

Individual income taxes (outside of pass-through income) would be less radically changed, although the significant reduction in the number of itemizers could have revenue consequences for the states. If most of these non-itemizers now move to the state standard deduction, which may have been less generous than itemizing at the state level because most states add back state income taxes, revenues could be lost. States would also have to determine their own conformity with federal itemized deductions.

To the extent that the states and localities retained a traditional income tax base, the simplification for businesses from cash-flow taxes would no longer be realized, because these measures would have to be calculated for state income tax purposes.

To What Extent Are Public Firms' Investments Affected by Financial Accounting?

Some arguments have been made that large publicly traded firms are more sensitive to the effects on profits in their financial accounts in making decisions to undertake investment. This concern raises issues for the destination-based cash-flow tax. The first is whether the tax will be treated as an income tax, with the expensing provisions treated as temporary timing provisions that do not change profits (because profits reflect deferred tax liabilities), or as a consumption tax, in which the tax is treated as a sales tax and profits rise. If treated as an income tax, arguments have been made that expensing will not provide the type of incentive discussed in the sections on investment and growth.[74]

Most economists have difficulties with this argument because it means that firms are not maximizing profits.

Financial Transactions

A value-added tax is normally imposed on real income (sales of goods and services) and not financial income. The blueprint, modified from an income tax, includes financial income. For example, it appears that net interest income will be included in the base (and thus the only change for deductions is when net interest payments are present). If financial transactions are included in the tax base (including not only interest, but capital gains, royalties, and other items) then should the border adjustments also apply? These are questions that may remain to be answered.[75]

[74] Lily L. Batchelder, *Accounting for Behavioral Considerations in Business Tax Reform: The Case of Expensing*, New York University School of Law, Working Paper, January 24, 2017, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2904885. See also Michael J. Graetz, *The Known Unknowns of Business Tax Reforms Proposed in the House Republican Blueprint*, Columbia Law and Economics Working Paper no. 557, February 21, 2017, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2910569##.

[75] See David P. Hariton, "Financial Transactions and the Border-Adjusted Cash flow Tax," *Tax Notes* (January 9, 2017), pp. 239.

Appendix. Growth and Stock Market Models

Growth Model

Estimating the long-run growth effects begins with a production function:

$$(1)\quad Q = A(aK^{\left(1-\frac{1}{S}\right)} + (1-a)(L^{(1-\frac{1}{S})})^{1/(1-\frac{1}{S})}$$

where Q is output, A and a are constants, K is capital, L is labor, and S is the factor substitution elasticity.

Maximizing profits subject to the payments for capital and labor yields the two first order conditions:

$$(2)\quad \frac{Q}{K} = {}^{a^{-S}}\, A^{\left(1-\frac{1}{S}\right)^{-S}}\, (\frac{R}{1-t} + d)^{S}$$

and

$$(3)\quad \frac{Q}{L} = {}^{a^{-S}}\, A^{\left(1-\frac{1}{S}\right)^{-S}}\, W^{S}$$

where R is the after tax rate of return, t is the effective tax rate on capital income, d is the economic depreciation rate, and W is the wage rate.

Labor supply is a function of after-tax wages:

$$(4)\quad L = B(W(1-ta))^{-EI}\,(W(1-tm)^{ES}$$

where B is a constant, ta is the average tax rate on wage income, tm is the marginal tax rate on wage income, EI is the absolute value of the income elasticity, and ES is the absolute value of the substitution elasticity.

The equation for R is based on the steady state equilibrium that the savings equals investment and thus the savings rate times output equals the growth rate times the capital stock. The savings rate is in turn a constant elastic function of the rate of return, thus:

$$(5)\quad \mathrm{C}\, R^{ER}\mathrm{Q} = \mathrm{gK}$$

where C is a constant, g is the (constant) growth rate, and ER is the savings rate elasticity with respect to the after tax return.

To solve the model, substitute the value of K and L from equations (2) and (3) into equation (1) to derive the relationship between R and W. Also combine equations (2) and (3) to express the capital-labor ratio as a function of relative prices. There is a set of five equations and five unknowns, which are differentiated and combined to yield the percentage change in output (which is a function of the percentage change in inputs of capital and labor, which are in turn determined by tax rate changes).

The analysis yields a percentage change in output dQ/Q, which is a function of the changes in the tax rate on capital income, the average tax rate on labor income and the marginal tax rate on labor income:

$$(6)\ \frac{dQ}{Q} = \frac{\alpha(S+ES-EI)}{(1-\alpha)}\ V\left(\frac{dt}{1-t}\right) + \frac{EIdta}{(1-ta)} - \frac{EStm}{(1-tm)}$$

where α is the share or capital income

$$(7)\ V = ER\ (\frac{R}{1-t})/(\frac{SR}{1-t} + ER\ \left(\frac{R}{1-t} + d\right))$$

Because this model applies to small changes, to get a better approximation of discrete changes, the initial tax rate is set at the midpoint of the old and new tax rates.

Calculating Stock Market Effects

This simplified formula does not include debt and interest payments, but these terms would disappear in any case. The calculations used a weighted average of debt and equity costs to determine the real after tax return, R, but there was virtually no difference if the higher equity return were used.

The value of stock per dollar of the existing capital stock begins with the annual flow of profits net of reinvestment (or dividends):

$$(8)\ \Pi = C(1-u) - (d+g) + (d+g)\,u\zeta$$

where Π is net profit, C is gross profit before depreciation, u is the statutory tax rate, d is the depreciation rate, g is the growth rate, and ζ is the value of depreciation discounted at the nominal growth rate (the value of depreciation deductions as a percent of investment).

If profits grow with the inflation rate p and the real growth rate g, and are discounted at the nominal interest rate (R+p), where R is the real after tax discount rate, the value of an indefinite stream of profits net of investment is:

$$(9)\ V = [C(1-u) - (d+g) + (d+g)u\zeta]/[R-g)$$

To determine C, use the standard user cost of capital, which relates gross profit to the after tax discount rate, economic, depreciation, tax depreciation, and the tax rate, for an investment that breaks even:

$$(10)\ C = \frac{(R+d)(1-uz)}{(1-u)}$$

where z is the present value of tax depreciation deductions (which is discounted at the nominal interest rate, R+p).

Substituting (10) into (9) results in:

$$(11)\ V = [(R + d)(1 - uz) - (d + g)(1 - u\zeta)]/(R - g)$$

or

$$(12)\ V = 1 - [(R + d)uz - (d + g)u\zeta]/(R - g)$$

Calculation of ζ is the same as the calculation of z, except that R is replaced by g. If depreciation is economic depreciation d/(R+d) for z and d/(d+g) for ζ, the value of V is 1, as the values in the numerator of the second term in (12) cancel out. Also if assets are expensed so that both z and ζequal 1, the value is (1-u).

Calculations were done for each type of asset (equipment, public utility structures, nonresidential structures, residential structures, and intangibles). The value of p was set at 0.02, g at 0.03, u at slightly below 0.35 (0.334) for equipment, nonresidential structures, and intangibles to reflect the production activities deduction, and 0.35 otherwise, and R at .05538, reflecting a weighted average of debt and equity.

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