# BACKGROUND ON CASH-FLOW AND CONSUMPTION-BASED APPROACHES TO TAXATION

Scheduled for a Public Hearing
Before the
HOUSE WAYS AND MEANS SUBCOMMITTEE ON TAX POLICY
on March 22, 2016

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# CONTENTS

# INTRODUCTION

The House Ways and Means Subcommittee on Tax Policy has scheduled a hearing on March 22, 2016, to discuss Member proposals relating to fundamental reform of the income tax system. This hearing will focus in particular on cash-flow and consumption-based approaches to taxation. This document,[1] prepared by the staff of the Joint Committee on Taxation, provides general background on cash-flow and consumption-based approaches to taxation (without describing or analyzing any particular legislative proposal).

Part I provides an overview of the proposals and issues that are discussed in this document. Part II summarizes the present-law Federal tax system. Part III offers a general description of four tax systems that adopt a cash-flow and consumption-based approach to taxation: the value-added tax ("VAT"), the flat tax, the X-tax, and the national retail sales tax. Part IV analyzes these proposals and provides a general discussion of cash-flow and consumption-based approaches to taxation. In addition, Part IV evaluates these proposals in the context of four criteria that economists have used to examine the effectiveness of tax systems: efficiency, equity, simplicity, and administration.

[1] This document may be cited as follows: Joint Committee on Taxation, *Background on Cash-Flow and Consumption-Based Approaches to Taxation*, (JCX-14-16), March 18, 2016. This document can also be found on the Joint Committee on Taxation website at www.jct.gov.

# I. SUMMARY

**The current U.S. Federal income tax system**

The current Federal income tax system consists primarily of an income tax imposed on the income of individuals and corporations. In the case of individuals, the rate of tax depends on the individual's filing status (*i.e.*, single, head of household, married filing a joint return, or married filing a separate return) and the individual's income. For each filing status, the rate schedules are broken into several ranges of income, known as income brackets, and the marginal tax rate increases as a taxpayer's income increases (rising from 10 percent to 39.6 percent). For corporations, the rate of tax depends on the amount of taxable income reported by the corporation, with marginal tax rates rising from 15 percent to 35 percent. While a large portion of business income is taxed under the corporate income tax, some business income—such as that earned through sole proprietorships, partnerships, and S corporations—is taxed at the individual level.

The U.S. Federal tax system also includes employment taxes, which are used to finance Social Security benefits, Medicare, and unemployment compensation; estate and gift taxes; and excise taxes on selected goods and services. Revenues generated from some of the U.S. excise taxes are dedicated to trust funds to be used for specific purposes.

While there is no Federal broad-based consumption tax, most States and many State political subdivisions impose general sales taxes. Most State and local governments also impose income and property taxes.

**Selected proposals to replace the income tax**

In general

A number of alternative tax systems to replace the current income tax system have been proposed. Many of these proposals alter the tax base so that it is based on consumption, rather than income. This document offers a general description and analysis of four such approaches to taxing consumption: the VAT, the flat tax, the X-tax, and a national retail sales tax.

VAT

A VAT is generally a tax imposed and collected on the "value added" at every stage in the production and distribution process of a good or service. Over 140 countries, including every member country in the Organization for Economic Cooperation and Development ("OECD") besides the United States, has implemented a VAT, although the countries have generally done so to supplement, rather than replace, their income tax system. While there are several ways to compute the taxable base for a VAT, the amount of value added can generally be thought of as the difference between the value of sales (outputs) and purchases (inputs) of a business. A VAT is generally thought of as a consumption tax, not because it uses value added as a base, but because it uses cash-flow accounting principles to measure value added.

The amount of value added may be determined in a number of ways under a VAT. The credit-invoice method has been the system of choice in nearly all countries that have adopted a

VAT, and determines the tax liability based on the difference between the aggregate VAT disclosed on sales and purchase invoices of a taxpayer. The subtraction method is similar to the credit-invoice method, but determines the tax liability based on records the taxpayer may maintain for non-tax purposes.

Flat taxes

In general, a "flat tax" is any tax system with only one marginal tax rate. Many of the flat tax proposals that have been developed do more than simply apply one rate to the current and individual income tax base; they redefine the base of the tax as well. There are two main approaches: a consumption base and an income base. The difference between the two is in the treatment of savings: an income-based tax includes the return to savings in the tax base, while a consumption-based tax does not.

X-tax

An X-tax is a progressive consumption tax that consists of two primary components: a flat tax on business cash flow and a graduated-rate tax on individual compensation with a top rate equal to the tax rate on business cash flow. Financial transactions are excluded from the tax base so that no tax is paid on capital gains, dividends, and receipt of interest.

Retail sales tax

A national retail sales tax is a tax imposed on the retail sales (*i.e.*, sales to final consumers) of taxable goods and services. A retail sales tax has approximately the same economic burden as a general VAT. However, a retail sales tax may vary from a VAT in terms of administrability, compliance burden, and ease of implementation.

## Discussion of issues

In general

Economists have used a number of criteria to assess the effectiveness of any tax system. It may be useful to consider these criteria when evaluating different approaches to fundamental tax reform, such as cash-flow or consumption-based approaches. In addition, redesigning or replacing the current income tax system may create significant transition issues, many of which have no clear resolution.

General criteria for analysis of tax systems

Analysts often evaluate tax systems under four criteria: efficiency, equity, simplicity, and administration.

Efficiency

Efficiency generally refers to the extent to which the tax system is neutral toward taxpayer behavior or distorts taxpayer behavior (*e.g.*, encourages consumption versus saving), and the extent to which the system promotes economic growth. The current income tax system generally increases the cost of future consumption compared to present consumption, and therefore may create a bias against saving. Economists disagree as to whether in fact an income tax does discourage saving, and empirical investigation has provided no conclusive results. Advocates of a consumption-based tax argue that such a tax eliminates the bias toward current consumption and helps increase saving. However, a consumption-based tax may not eliminate all distortions in favor of consumption, depending on the breadth of the tax and whether different rates of tax are applied to different parts of the tax base.

Another aspect of efficiency is the effect on imports and exports. Some advocates of consumption-based taxes argue that such taxes enhance a country's ability to export goods and services and that the current U.S. tax system creates a bias against exports. In general, this is because, unlike an income tax, a consumption-based tax could be imposed on imports, but not on exports. However, many economists believe that replacing the income tax with a consumption-based tax is unlikely to change U.S. demand for imports or increase the sale of domestically manufactured goods abroad.

Equity

Whether a tax system is fair is by its nature a subjective question. While the notion of "ability to pay" (*i.e.*, the taxpayer's capacity to bear taxes) is commonly used to determine fairness, there is no general agreement regarding the appropriate standard by which to assess a taxpayer's ability to pay. Another aspect of fairness is the extent to which the tax system treats similarly situated individuals the same.

Almost any tax system can be adjusted to the extent policymakers desire in order to make the system fair. For example, various flat tax proposals exempt certain levels of income from tax in order to reduce the tax burden on persons with lower incomes. Similarly, a VAT or retail sales tax could be modified, if desired, to exempt certain items from the tax. For example, many States exempt certain food products from sales taxes. Perceived unfairness in the tax system could also be addressed in other ways, such as through increased transfer payments. While such adjustments may make a system fairer, they may also make the tax system more complicated, thereby increasing the difficulty of administration. Such adjustments, depending on how they are made, may also reduce efficiency by favoring one type of taxpayer behavior over another.

Simplicity and administration

One of the common criticisms of the current income tax system is that it is complex, making it difficult for taxpayers to comply with the law as well as difficult for the Internal Revenue Service ("IRS") to enforce the law. The extent to which an alternative tax system is easier to enforce and administer depends greatly on the specifics of the proposal. In general, some of the factors that relate to administration include the number of persons (both businesses and individuals) that are required to file tax returns, whether there are multiple rates (this is particularly important in the case of a consumption-based tax that has different rates on different items), and the extent of exemptions and special rules for certain types of activities.

Transition issues

Any large-scale changes in the tax system may create potential windfall losses and benefits for certain taxpayers. In changing from an income-based tax to a consumption-based tax, some of the possible effects include changes in prices and interest rates. Transition rules may be designed to alleviate the effect of the transition. Such rules may, however, reduce efficiency gains in switching to a consumption tax.

# II. SUMMARY OF PRESENT-LAW FEDERAL TAX SYSTEM

## A. Individual Income Tax

**In general**

A United States citizen or resident alien generally is subject to the U.S. individual income tax on his or her worldwide taxable income.[2] Taxable income equals the taxpayer's total gross income less certain exclusions, exemptions, and deductions. Graduated tax rates are then applied to a taxpayer's taxable income to determine his or her individual income tax liability. A taxpayer may face additional liability if the alternative minimum tax applies. A taxpayer may reduce his or her income tax liability by any applicable tax credits.

**Adjusted gross income**

Under the Internal Revenue Code of 1986 (the "Code"), gross income means "income from whatever source derived" except for certain items specifically exempt or excluded by statute. Sources of income include compensation for services, interest, dividends, capital gains, rents, royalties, alimony and separate maintenance payments, annuities, income from life insurance and endowment contracts (other than certain death benefits), pensions, gross profits from a trade or business, income in respect of a decedent, and income from S corporations, partnerships,[3] trusts or estates.[4] Statutory exclusions from gross income include death benefits payable under a life insurance contract, interest on certain State and local bonds, the receipt of property by gift or inheritance, employer-provided health insurance, employer-provided pension contributions, and certain other employer-provided benefits.

An individual's adjusted gross income ("AGI") is determined by subtracting certain "above-the-line" deductions from gross income. These deductions include trade or business expenses, capital losses, contributions to a qualified retirement plan by a self-employed

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[2] Foreign tax credits generally are available against U.S. income tax imposed on foreign source income to the extent of foreign income taxes paid on that income. A nonresident alien generally is subject to the U.S. individual income tax only on income with a sufficient nexus to the United States.

[3] In general, partnerships and S corporations (*i.e.*, corporations subject to the provisions of subchapter S of the Internal Revenue Code) are treated as pass-through entities for Federal income tax purposes. Thus, no Federal income tax is imposed at the entity level. Rather, income of such entities is passed through and taxed to the owners at the individual level. A business entity organized as a limited liability company ("LLC") under applicable State law generally is treated as a partnership for Federal income tax purposes if it has two or more members (a single-member LLC is generally treated as a sole-proprietorship for Federal income tax purposes).

[4] In general, estates and most trusts pay tax on income at the entity level, unless the income is distributed or required to be distributed under governing law or under the terms of the governing instrument. Such entities determine their tax liability using a special tax rate schedule and are subject to the alternative minimum tax. Certain trusts, however, do not pay Federal income tax at the trust level. For example, certain trusts that distribute all income currently to beneficiaries are treated as pass-through or conduit entities (similar to a partnership). Other trusts are treated as being owned by grantors in whole or in part for tax purposes; in such cases, the grantors are taxed on the income of the trust.

individual, contributions to individual retirement arrangements ("IRAs"), certain moving expenses, certain education-related expenses, and alimony payments.

**Taxable income**

To determine taxable income, an individual reduces AGI by any personal exemption deductions and either the applicable standard deduction or his or her itemized deductions. Personal exemptions generally are allowed for the taxpayer, his or her spouse, and any dependents. For tax year 2016, the amount deductible for each personal exemption is $4,050. This amount is indexed annually for inflation. Additionally, the personal exemption phase-out ("PEP") reduces a taxpayer's personal exemptions by two percent for each $2,500 ($1,250 for married filing separately), or fraction thereof, by which the taxpayer's AGI exceeds $259,400 (single), $285,350 (head-of-household), $311,300 (married filing jointly and surviving spouses) and $155,650 (married filing separately).[5] These threshold amounts are indexed for inflation.

A taxpayer also may reduce AGI by the amount of the applicable standard deduction. The basic standard deduction varies depending upon a taxpayer's filing status. For 2016, the amount of the standard deduction is $6,300 for single individuals and married individuals filing separate returns, $9,300 for heads of households, and $12,600 for married individuals filing a joint return and surviving spouses. An additional standard deduction is allowed with respect to any individual who is elderly (*i.e*., above age 64) or blind.[6] The amounts of the basic standard deduction and the additional standard deductions are indexed annually for inflation.

In lieu of taking the applicable standard deductions, an individual may elect to itemize deductions. The deductions that may be itemized include State and local income taxes, real property and certain personal property taxes, home mortgage interest, charitable contributions, certain investment interest, medical expenses (in excess of 10 percent of AGI, or 7.5 percent in the case of taxpayers above age 64), casualty and theft losses (in excess of 10 percent of AGI and in excess of $100 per loss), and certain miscellaneous expenses (in excess of two percent of AGI). Additionally, the total amount of itemized deductions allowed is reduced by $0.03 for each dollar of AGI in excess of $259,400 (single), $285,350 (head-of-household), $311,300 (married filing jointly and surviving spouses) and $155,650 (married filing separately).[7] These threshold amounts are indexed for inflation.

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[5] A taxpayer thus has all personal exemptions completely phased out at incomes of $381,900 (single), $407,850 (head-of-household), $433,800 (married filing jointly) and $216,900 (married filing separately).

[6] For 2016, the additional amount is $1,250 for married taxpayers (for each spouse meeting the applicable criterion) and surviving spouses. The additional amount for single individuals and heads of households is $1,550. If an individual is both blind and aged, the individual is entitled to two additional standard deductions, for a total additional amount (for 2016) of $2,500 or $3,100, as applicable.

[7] This rule is sometimes referred to as the "Pease limitation." A taxpayer may not lose more than 80 percent of his or her deductions as a result of this provision.

**Table 1.–2016 Standard Deduction and Personal Exemption Values**

| | |
|---|---|
| Standard Deduction | |
| Married Filing Jointly | $12,600 |
| Head of Household | $9,300 |
| Single and Married Filing Separately | $6,300 |
| Personal Exemptions | $4,050 |

**Tax liability**

In general

A taxpayer's net income tax liability is the greater of (1) regular individual income tax liability reduced by credits allowed against the regular tax, or (2) tentative minimum tax reduced by credits allowed against the minimum tax. The amount of income subject to tax is determined differently under the regular tax and the alternative minimum tax, and separate rate schedules apply. Lower rates apply for long-term capital gains and certain dividends; those rates apply for both the regular tax and the alternative minimum tax.

Regular tax liability

To determine regular tax liability, a taxpayer generally must apply the tax rate schedules (or the tax tables) to his or her regular taxable income. The rate schedules are broken into several ranges of income, known as income brackets, and the top marginal tax rate increases as a taxpayer's income increases. Separate rate schedules apply based on an individual's filing status. For 2016, the regular individual income tax rate schedules are as follows:

**Table 2.–Federal Individual Income Tax Rates for 2016**

| If taxable income is: | Then income tax equals: |
|---|---|
| ***Single Individuals*** | |
| Not over $9,275 | 10% of the taxable income |
| Over $9,275 but not over $37,650 | $927.50 plus 15% of the excess over $9,275 |
| Over $37,650 but not over $91,150 | $5,183.75 plus 25% of the excess over $37,650 |
| Over $91,150 but not over $190,150 | $18,558.75 plus 28% of the excess over $91,150 |
| Over $190,150 but not over $413,350 | $46,278.75 plus 33% of the excess over $190,150 |
| Over $413,350 but not over $415,050 | $119,934.75 plus 35% of the excess over $413,350 |
| Over $415,050 | $120,529.75 plus 39.6% of the excess over $415,050 |
| ***Heads of Households*** | |
| Not over $13,250 | 10% of the taxable income |
| Over $13,250 but not over $50,400 | $1,325 plus 15% of the excess over $13,250 |
| Over $50,400 but not over $130,150 | $6,897.50 plus 25% of the excess over $50,400 |
| Over $130,150 but not over $210,800 | $26,835 plus 28% of the excess over $130,150 |
| Over $210,800 but not over $413,350 | $49,417 plus 33% of the excess over $210,800 |
| Over $413,350 but not over $441,000 | $116,258.50 plus 35% of the excess over $413,350 |
| Over $441,000 | $125,936 plus 39.6% of the excess over $441,000 |
| ***Married Individuals Filing Joint Returns and Surviving Spouses*** | |
| Not over $18,550 | 10% of the taxable income |
| Over $18,550 but not over $75,300 | $1,855 plus 15% of the excess over $18,550 |
| Over $75,300 but not over $151,900 | $10,367.50 plus 25% of the excess over $75,300 |
| Over $151,900 but not over $231,450 | $29,517.50 plus 28% of the excess over $151,900 |
| Over $231,450 but not over $413,350 | $51,791.50 plus 33% of the excess over $231,450 |
| Over $413,350 but not over $466,950 | $111,818.50 plus 35% of the excess over $413,350 |
| Over $466,950 | $130,578.50 plus 39.6% of the excess over $466,950 |

| If taxable income is: | Then income tax equals: |
|---|---|
| ***Married Individuals Filing Separate Returns*** | |
| Not over $9,275 | 10% of the taxable income |
| Over $9,275 but not over $37,650 | $927.50 plus 15% of the excess over $9,275 |
| Over $37,650 but not over $75,950 | $5,183.75 plus 25% of the excess over $37,650 |
| Over $75,950 but not over $115,725 | $14,758.75 plus 28% of the excess over $75,950 |
| Over $115,725 but not over $206,675 | $25,895.75 plus 33% of the excess over $115,725 |
| Over $206,675 but not over $233,475 | $55,902.25 plus 35% of the excess over $206,675 |
| Over $233,475 | $65,289.25 plus 39.6% of the excess over $233,475 |

An individual's marginal tax rate may be reduced by the allowance of a deduction equal to a percentage of income from certain domestic manufacturing activities.[8]

Special capital gains and dividends rates

In general, gain or loss reflected in the value of an asset is not recognized for income tax purposes until a taxpayer disposes of the asset. On the sale or exchange of a capital asset, any gain generally is included in income. Any net capital gain of an individual is taxed at maximum rates lower than the rates applicable to ordinary income. Net capital gain is the excess of the net long-term capital gain for the taxable year over the net short-term capital loss for the year. Gain or loss is treated as long-term if the asset is held for more than one year.

Capital losses generally are deductible in full against capital gains. In addition, individual taxpayers may deduct capital losses against up to $3,000 of ordinary income in each year. Any remaining unused capital losses may be carried forward indefinitely to another taxable year.

A maximum rate applies to capital gains and dividends. For 2016, the maximum rate of tax on the adjusted net capital gain of an individual is 20 percent on any amount of gain that otherwise would be taxed at a 39.6-percent rate. In addition, any adjusted net capital gain otherwise taxed at a 10- or 15-percent rate is taxed at a zero-percent rate. Adjusted net capital gain otherwise taxed at rates greater than 15-percent but less than 39.6 percent is taxed at a 15-percent rate. These rates apply for purposes of both the regular tax and the alternative minimum tax. Dividends are generally taxed at the same rate as capital gains.

[8] This deduction is described in more detail below in the summary of the tax rules applicable to corporations.

Net investment income

An additional tax is imposed on net investment income in the case of an individual, estate, or trust. In the case of an individual, the tax is 3.8 percent of the lesser of net investment income or the excess of modified adjusted gross income over the threshold amount. The threshold amount is $250,000 in the case of a joint return or surviving spouse, $125,000 in the case of a married individual filing a separate return, and $200,000 in any other case. Thus, for taxpayers with modified adjusted gross income in excess of this threshold, the rate on certain capital gains and dividends is 23.8 percent.

Net investment income is the excess of (1) the sum of (a) gross income from interest, dividends, annuities, royalties, and rents, other than such income which is derived in the ordinary course of a trade or business that is not a passive activity with respect to the taxpayer or a trade or business of trading in financial instruments or commodities, and (b) net gain (to the extent taken into account in computing taxable income) attributable to the disposition of property other than property held in the active conduct of a trade or business that is not in the trade or business of trading in financial instruments or commodities, over (2) deductions properly allocable to such gross income or net gain.

Credits against tax

An individual may reduce his or her tax liability by any available tax credits. In some instances, a permissible credit is "refundable," *i.e.*, the amount of these credits exceeds tax liability (net of other credits) and may create an overpayment which may lead to a refund. Two major credits are the child tax credit and the earned income credit.

An individual may claim a tax credit for each qualifying child under the age of 17. The amount of the credit per child is $1,000. The aggregate amount of child credits that may be claimed is phased out for individuals with income over certain threshold amounts. Specifically, the otherwise allowable child tax credit is reduced by $50 for each $1,000 (or fraction thereof) of modified adjusted gross income over $75,000 for single individuals or heads of households, $110,000 for married individuals filing joint returns, and $55,000 for married individuals filing separate returns. To the extent the child credit exceeds the taxpayer's tax liability, the taxpayer is eligible for a refundable credit[9] (the additional child tax credit) equal to 15 percent of earned income in excess of $3,000.[10]

A refundable earned income tax credit ("EITC") is available to low-income workers who satisfy certain requirements. The amount of the EITC varies depending upon the taxpayer's earned income and whether the taxpayer has one, two, more than two, or no qualifying children.

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[9] The refundable credit may not exceed the maximum credit per child of $1,000.

[10] Families with three or more children may determine the additional child tax credit using an alternative formula, if this results in a larger credit than determined under the earned income formula. Under the alternative formula, the additional child tax credit equals the amount by which the taxpayer's social security taxes exceed the taxpayer's earned income tax credit.

In 2016, the maximum EITC is $6,269 for taxpayers with more than two qualifying children, $5,572 for taxpayers with two qualifying children, $3,373 for taxpayers with one qualifying child, and $506 for taxpayers with no qualifying children. The credit amount begins to phaseout at an income level of $23,740 for joint-filers with children, $18,190 for other taxpayers with children, $13,820 for joint-filers with no children and $8,270 for other taxpayers with no qualifying children. The phaseout percentages are 15.98 for taxpayers with one qualifying child, 21.06 for two or more qualifying children and 7.65 for no qualifying children.

Tax credits are also allowed for certain business expenditures, certain foreign income taxes paid or accrued, certain education expenditures, certain child care expenditures, and for certain elderly or disabled individuals. The personal credits allowed against the regular tax are generally allowed against the alternative minimum tax.

Alternative minimum tax liability

An alternative minimum tax is imposed on an individual, estate, or trust in an amount by which the tentative minimum tax exceeds the regular income tax for the taxable year. For 2016, the tentative minimum tax is the sum of (1) 26 percent of so much of the taxable excess as does not exceed $186,300 ($93,150 in the case of a married individual filing a separate return) and (2) 28 percent of the remaining taxable excess. The taxable excess is so much of the alternative minimum taxable income ("AMTI") as exceeds the exemption amount. The breakpoint between the 26-percent and 28-percent bracket is indexed for inflation. The maximum tax rates on net capital gain and dividends used in computing the regular tax are used in computing the tentative minimum tax. AMTI is the taxpayer's taxable income increased by the taxpayer's tax preferences and adjusted by determining the tax treatment of certain items in a manner that negates the deferral of income resulting from the regular tax treatment of those items.

The exemption amounts for 2016 are: (1) $83,800 in the case of married individuals filing a joint return and surviving spouses; (2) $53,900 in the case of other unmarried individuals; (3) $41,900 in the case of married individuals filing separate returns; and (4) $23,900 in the case of an estate or trust. The exemption amounts are phased out by an amount equal to 25 percent of the amount by which the individual's AMTI exceeds (1) $159,700 in the case of married individuals filing a joint return and surviving spouses, (2) $119,700 in the case of other unmarried individuals, and (3) $79,850 in the case of married individuals filing separate returns or an estate or a trust. These amounts are indexed for inflation.

Among the preferences and adjustments applicable to the individual alternative minimum tax are accelerated depreciation on certain property used in a trade or business, circulation expenditures, research and experimental expenditures, certain expenses and allowances related to oil and gas and mining exploration and development, certain tax-exempt interest income, and a portion of the amount of gain excluded with respect to the sale or disposition of certain small business stock. In addition, personal exemptions, the standard deduction, and certain itemized deductions, such as State and local taxes and miscellaneous deductions, are not allowed to reduce AMTI.

## B. Corporate Income Tax

**Taxable income**

Corporations organized under the laws of any of the 50 States (and the District of Columbia) generally are subject to the U.S. corporate income tax on their worldwide taxable income.[11]

The taxable income of a corporation generally is comprised of gross income less allowable deductions. Gross income generally is income derived from any source, including gross profit from the sale of goods and services to customers, rents, royalties, interest (other than interest from certain indebtedness issued by State and local governments), dividends, gains from the sale of business and investment assets, and other income.

Allowable deductions include ordinary and necessary business expenditures, such as salaries, wages, contributions to profit-sharing and pension plans and other employee benefit programs, repairs, bad debts, taxes (other than Federal income taxes), contributions to charitable organizations (subject to an income limitation), advertising, interest expense, certain losses, selling expenses, and other expenses. Expenditures that produce benefits in future taxable years to a taxpayer's business or income-producing activities (such as the purchase of plant and equipment) generally are capitalized and recovered over time through depreciation, amortization or depletion allowances. A net operating loss incurred in one taxable year may be carried back two years or carried forward 20 years. Deductions are also allowed for certain amounts despite the lack of a direct expenditure by the taxpayer. For example, a deduction is allowed for all or a portion of the amount of dividends received by a corporation from another corporation (provided certain ownership requirements are satisfied). Moreover, a deduction is allowed for a portion of the amount of income attributable to certain manufacturing activities.

The Code also specifies certain expenditures that may not be deducted, such as dividends paid to shareholders, expenses associated with earning tax-exempt income,[12] certain entertainment expenditures, certain executive compensation in excess of $1,000,000 per year, a portion of the interest on certain high-yield debt obligations that resemble equity, as well as fines, penalties, bribes, kickbacks and illegal payments.

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[11] Foreign tax credits generally are available against U.S. income tax imposed on foreign source income to the extent of foreign income taxes paid on that income. A foreign corporation generally is subject to the U.S. corporate income tax only on income with a sufficient nexus to the United States.

Under subchapter S of the Code, a qualified small business corporation may elect not to be subject to the corporate income tax (*i.e.*, may make an "S corporation election"). If an S corporation election is made, the income of the corporation will flow through to the shareholders and be taxable directly to the shareholders.

[12] For example, the carrying costs of tax-exempt State and local obligations and the premiums on certain life insurance policies are not deductible.

**Tax liability**

A corporation's regular income tax liability generally is determined by applying the following tax rate schedule to its taxable income.

**Table 3.–Federal Corporate Income Tax Rates**

| If taxable income is: | Then the income tax rate is: |
|---|---|
| $0-$50,000 ....................................................... | 15 percent of taxable income |
| $50,001-$75,000 .............................................. | 25 percent of taxable income |
| $75,001-$10,000,000 ....................................... | 34 percent of taxable income |
| Over $10,000,000 ............................................ | 35 percent of taxable income |

The first two graduated rates described above are phased out for corporations with taxable income between $100,000 and $335,000 (at a marginal rate of 39 percent). As a result, a corporation with taxable income between $335,000 and $10,000,000 effectively is subject to a flat tax rate of 34 percent. Also, the application of the 34-percent rate is gradually phased out for corporations with taxable income between $15,000,000 and $18,333,333 (at a marginal rate of 38 percent), such that a corporation with taxable income of $18,333,333 or more is effectively subject to a flat rate of 35 percent.

In contrast to the treatment of capital gains in the individual income tax, no separate rate structure exists for corporate capital gains. Thus, the maximum rate of tax on the net capital gains of a corporation is 35 percent. A corporation may not deduct the amount of capital losses in excess of capital gains for any taxable year. Disallowed capital losses may be carried back three years or carried forward five years.

Corporations are taxed at lower rates on income from certain domestic production activities. This rate reduction is effected by the allowance of a deduction equal to a percentage of qualifying domestic production activities income. The deduction is generally equal to nine percent of the income from manufacturing, construction, and certain other activities specified in the Code.[13]

[13] With a nine percent deduction, a corporation is taxed at a rate of 35 percent on only 91 percent of qualifying income, resulting in an effective tax rate of 0.91 * 35, or 31.85 percent. A similar reduction applies to the graduated rates applicable to individuals with qualifying domestic production activities income.

Like individuals, corporations may reduce their tax liability by any applicable tax credits. Tax credits applicable to businesses include credits for biofuels and renewable power, investment tax credits (applicable to investment in certain renewable energy property and the rehabilitation of certain real property), the research credit, the low-income housing credit (applicable to investment in certain low-income housing projects), the empowerment zone employment credit (applicable to wages paid to certain residents of, or employees in, empowerment zones), the work opportunity credit (applicable to wages paid to individuals from certain targeted groups), and the disabled access credit (applicable to expenditures by certain small businesses to make the businesses accessible to disabled individuals).[14] Unused credits generally may be carried back one year and carried forward twenty years.

A foreign tax credit is available, subject to limitations, for certain foreign income taxes paid or accrued. Foreign income taxes limited in a tax year may be carried back one year or forward ten years.

**Affiliated group**

Domestic corporations that are affiliated through 80 percent or more corporate ownership may elect to file a consolidated return in lieu of filing separate returns. Corporations filing a consolidated return generally are treated as a single corporation; thus, the losses of one corporation can offset the income (and thus reduce the otherwise applicable tax) of other affiliated corporations.

**Minimum tax**

A corporation is subject to an alternative minimum tax that is payable, in addition to all other tax liabilities, to the extent that it exceeds the corporation's regular income tax liability. The tax is imposed at a flat rate of 20 percent on alternative minimum taxable income in excess of a $40,000 exemption amount.[15] Credits that are allowed to offset a corporation's regular tax liability generally are not allowed to offset its minimum tax liability. If a corporation pays the alternative minimum tax, the amount of the tax paid is allowed as a credit against the regular tax in future years.

Alternative minimum taxable income is the corporation's taxable income increased by the corporation's tax preferences and adjusted by determining the tax treatment of certain items in a manner that negates the deferral of income resulting from the regular tax treatment of those items. Among the preferences and adjustments applicable to the corporate alternative minimum tax are accelerated depreciation on certain property, certain expenses and allowances related to oil and gas and mining exploration and development, certain amortization expenses related to

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[14] Certain of these credits are scheduled to expire in 2016 or later. For more information on expiring provisions of the Internal Revenue Code, see Joint Committee on Taxation, *List of Expiring Federal Tax Provisions 2016-2025* (JCX-1-16), January 8, 2016.

[15] The exemption amount is phased out for corporations with income above certain threshold, and is completely phased out for corporations with alternative minimum taxable income of $310,000 or more.

pollution control facilities, and certain tax-exempt interest income. In addition, corporate alternative minimum taxable income is increased by 75 percent of the amount by which the corporation's "adjusted current earnings" exceed its alternative minimum taxable income (determined without regard to this adjustment). Adjusted current earnings generally are determined with reference to the rules that apply in determining a corporation's earnings and profits.

**Treatment of corporate distributions**

The taxation of a corporation generally is separate and distinct from the taxation of its shareholders. A distribution by a corporation to one of its shareholders generally is taxable as a dividend to the shareholder to the extent of the corporation's current or accumulated earnings and profits.[16] Thus, the amount of a corporate dividend generally is taxed twice: once when the income is earned by the corporation and again when the dividend is distributed to the shareholder.[17] Conversely, amounts paid as interest to the debtholders of a corporation generally are subject to only one level of tax (at the recipient level) since the corporation generally is allowed a deduction for the amount of interest expense paid or accrued.

Amounts received by a shareholder in complete liquidation of a corporation generally are treated as full payment in exchange for the shareholder's stock. A liquidating corporation recognizes gain or loss on the distributed property as if such property were sold to the distributee for its fair market value. However, if a corporation liquidates a subsidiary corporation of which it has 80 percent or more control, no gain or loss generally is recognized by either the parent corporation or the subsidiary corporation.

**Accumulated earnings and personal holding company taxes**

Taxes at a rate of 20 percent (the top rate generally applicable to dividend income of individuals) may be imposed upon the accumulated earnings or personal holding company income of a corporation. The accumulated earnings tax may be imposed if a corporation retains earnings in excess of reasonable business needs. The personal holding company tax may be imposed upon the excessive passive income of a closely held corporation. The accumulated earnings tax and the personal holding company tax, when they apply, in effect impose the shareholder-level tax in addition to the corporate-level tax on accumulated earnings or undistributed personal holding company income.

[16] A distribution in excess of the earnings and profits of a corporation generally is a tax-free return of capital to the shareholder to the extent of the shareholder's adjusted basis (generally, cost) in the stock of the corporation; such distribution is a capital gain if in excess of basis. A distribution of property other than cash generally is treated as a taxable sale of such property by the corporation and is taken into account by the shareholder at the property's fair market value. A distribution of stock of the corporation generally is not a taxable event to either the corporation or the shareholder.

[17] This double taxation is mitigated by a reduced tax rate generally applicable to dividend income of individuals.

### C. Estate, Gift and Generation-Skipping Transfer Taxes

The United States generally imposes a gift tax on any transfer of property by gift made by a U.S. citizen or resident, whether made directly or indirectly and whether made in trust or otherwise. Nonresident aliens are subject to the gift tax with respect to transfers of tangible real or personal property where the property is located in the United States at the time of the gift. The gift tax is imposed on the donor and is based on the fair market value of the property transferred. Deductions are allowed for certain gifts to spouses and to charities. Annual gifts of $14,000 (for 2016) or less per donor and per donee generally are not subject to tax.

An estate tax also is imposed on the taxable estate of any person who was a citizen or resident of the United States at the time of death, and on certain property belonging to a nonresident of the United States that is located in the United States at the time of death. The estate tax is imposed on the estate of the decedent and generally is based on the fair market value of the property passing at death.[18] The taxable estate generally equals the worldwide gross estate less certain allowable deductions, including a marital deduction for certain bequests to the surviving spouse of the decedent and a deduction for certain bequests to charities.

The gift and estate taxes are unified such that a single graduated rate schedule and effective exemption amount apply to an individual's cumulative taxable gifts and bequests. The unified estate and gift tax rates begin at 18 percent on the first $10,000 in cumulative taxable transfers and reach 40 percent on cumulative taxable transfers over $1,000,000. A unified credit of $2,125,800 (for 2016) is available with respect to taxable transfers by gift or at death. This credit effectively exempts a total of $5.45 million[19] (for 2016) in cumulative taxable transfers from the gift tax or the estate tax. The unified credit thus generally also has the effect of rendering the marginal rates below 40 percent inapplicable. Unused exemption as of the death of a spouse generally is available for use by the surviving spouse; this feature of the law sometimes is referred to as exemption portability.

A separate transfer tax is imposed on generation-skipping transfers in addition to any estate or gift tax that is normally imposed on such transfers. This tax generally is imposed on transfers, either directly or through a trust or similar arrangement, to a beneficiary in more than

[18] In addition to interests in property owned by the decedent at the time of death, the Federal estate tax also is imposed on (1) life insurance that was either payable to the decedent's estate or in which the decedent had an incident of ownership at death, (2) property over which the decedent had a general power of appointment at death, (3) annuities purchased by the decedent or his employer that were payable to the decedent before death, (4) property held by the decedents as joint tenants, (5) property transferred by the decedent before death in which the decedent retained a life estate or over which the decedent had the power to designate who will possess or enjoy the property, (6) property revocably transferred by the decedent before death, and (7) certain transfers taking effect at the death of the decedent.

[19] The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, Pub. L. No. 111-312, establishes an exemption amount of $5 million for 2010 and 2011 and indexes this amount for inflation for years after 2011. The American Taxpayer Relief Act of 2012 made permanent the exemption provisions of the 2010 Act.

one generation below that of the transferor.  For 2016, the generation-skipping transfer tax is imposed at a flat rate of 40 percent on generation-skipping transfers in excess of $5.45 million.

## D. Social Insurance Taxes

**In general**

Social Security benefits and certain Medicare benefits are financed primarily by payroll taxes on covered wages. The Federal Insurance Contributions Act ("FICA") imposes tax on employers based on the amount of wages paid to an employee during the year. The tax imposed is composed of two parts: (1) the old age, survivors, and disability insurance ("OASDI") tax equal to 6.2 percent of covered wages up to the taxable wage base ($118,500 in 2016); and (2) the Medicare hospital insurance ("HI") tax amount equal to 1.45 percent of covered wages.[20] In addition to the tax on employers, each employee is subject to FICA taxes equal to the amount of tax imposed on the employer. The employee level tax generally must be withheld and remitted to the Federal government by the employer.[21]

As a parallel to FICA taxes, the Self-Employment Contributions Act ("SECA") imposes taxes on the net income from self-employment of self-employed individuals. The rate of the OASDI portion of SECA taxes is equal to the combined employee and employer OASDI FICA tax rates and applies to self-employment income up to the FICA taxable wage base. Similarly, the rate of the HI portion is the same as the combined employer and employee HI rates and there is no cap on the amount of self-employment income to which the rate applies.[22]

In addition to FICA taxes, employers are subject to a Federal unemployment insurance payroll tax equal to six percent of the total wages of each employee (up to $7,000) on covered employment. Employers are eligible for a Federal credit equal to 5.4 percent for State unemployment taxes, yielding a 0.6 percent effective tax rate. Federal unemployment insurance payroll taxes are used to fund programs maintained by the States for the benefit of unemployed workers.

**Additional hospital insurance tax on certain high-income individuals**

The employee portion of the HI tax is increased by an additional tax of 0.9 percent on wages received in excess of a specific threshold amount.[23] However, unlike the general 1.45

[20] Since 1994, the HI payroll tax has not been subject to a wage cap.

[21] Instead of FICA taxes, railroad employers and employees are subject, under the Railroad Retirement Tax Act ("RRTA"), to taxes equivalent to the OASDI and HI taxes under FICA. Under RRTA, employers and employees are also subject to an additional tax, referred to as the "tier 2" tax, on compensation up to a certain amount.

[22] For purposes of computing net earnings from self-employment, taxpayers are permitted a deduction equal to the product of the taxpayer's earnings (determined without regard to this deduction) and one-half of the sum of the rates for OASDI (12.4 percent) and HI (2.9 percent), *i.e.*, 7.65 percent of net earnings. This deduction reflects the fact that the FICA rates apply to an employee's wages, which do not include FICA taxes paid by the employer, whereas a self-employed individual's net earnings are economically equivalent to an employee's wages plus the employer share of FICA taxes.

[23] Sec. 3101(b), as amended by the Patient Protection and Affordable Care Act ("PPACA"), Pub. L. No. 111-148.

percent HI tax on wages, this additional tax is on the combined wages of the employee and the employee's spouse, in the case of a joint return. The threshold amount is $250,000 in the case of a joint return, $125,000 in the case of a married individual filing a separate return, and $200,000 in any other case (unmarried individual, head of household or surviving spouse).[24]

The same additional HI tax applies to the HI portion of SECA tax on self-employment income in excess of the threshold amount. Thus, an additional tax of 0.9 percent is imposed on every self-employed individual on self-employment income in excess of the threshold amount.[25]

[24] These threshold amounts are not indexed for inflation.

[25] Sec. 1402(b).

### E. Major Excise Taxes

The Federal tax system imposes excise taxes on selected goods and services. Generally, excise taxes are taxes imposed on a per unit or *ad valorem* (*i.e.*, percentage of price) basis on the production, importation, or sale of a specific good or service. Among the goods and services subject to U.S. excise taxes are motor fuels, alcoholic beverages, tobacco products, firearms, air and ship transportation, certain environmentally hazardous products (*e.g.*, the tax on ozone depleting chemicals, and a tax on crude oil and certain petroleum products to fund the Oil Spill Liability Trust Fund), coal, certain telephone communications (*e.g*. local service), certain wagers, certain medical devices, indoor tanning services, and vehicles lacking in fuel efficiency.[26] Additionally, an annual fee is imposed on health insurers and on certain manufacturers and importers of branded prescription drugs pursuant to specified government programs. The largest excise taxes in terms of revenue are those for gasoline motor fuel ($25.4 billion collected in fiscal year 2015),[27] diesel motor fuel ($10.3 billion),[28] and domestic air tickets ($9.8 billion).[29] In fiscal year 2013, the latest fiscal year for which data is publicly available, $13.6 billion was collected on the excise tax on domestic cigarettes.[30]

Revenues from certain Federal excise taxes are dedicated to trust funds (*e.g*., the Highway Trust Fund) for designated expenditure programs, and revenues from other excise taxes (*e.g*., alcoholic beverages) go to the General Fund for general purpose expenditures.

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[26] For a description of the various Federal excise taxes, see Joint Committee on Taxation, *Present Law and Background Information on Federal Excise Taxes* (JCX-99-15), July 13, 2015.

[27] U.S. Department of Treasury, "FY 2015 Highway Consolidated Reports," September 2015, available at ftp://ftp.publicdebt.treas.gov/dfi/tfmb/dfihw0915.pdf.

[28] *Ibid*.

[29] U.S. Department of Treasury, "FY 2015 Airport and Airways Reports," September 2015, available at ftp://ftp.publicdebt.treas.gov/dfi/tfmb/dfiaa0915.pdf.

[30] Internal Revenue Service, *Statistics of Income Bulletin*, Historical Table 20, "Federal Excise Taxes Reported to or Collected By the Internal Revenue Service, Alcohol and Tobacco Tax and Trade Bureau, and Customs Service, By Type of Excise Tax, Fiscal Years 1999-2013," http://www.irs.gov/pub/irs-soi/histab20.xls (2014).

**Table 4.–2016 Federal Excise Tax Rates for Selected Taxed Products or Services**

| | |
|---|---|
| Gasoline Motor Fuel | 18.3 cents per gallon[31] |
| Diesel Motor Fuel | 24.3 cents per gallon[32] |
| Cigarettes | $50.33 per thousand small cigarettes; $105.69 per thousand large cigarettes. |
| Domestic Air Tickets | 7.5 percent of fare, plus $4.00 (2016) per domestic flight segment generally. |

[31] This rate does not include the additional 0.1 cent per gallon to fund the Leaking Underground Storage Tank Trust Fund.

[32] This rate does not include the additional 0.1 cent per gallon to fund the Leaking Underground Storage Tank Trust Fund.

# III. GENERAL DESCRIPTION OF SELECTED PROPOSALS TO REPLACE THE INCOME TAX

## A. Value-Added Tax

### 1. In general

A VAT is generally a tax imposed and collected on the "value added" at every stage in the production and distribution process of a good or service. Over 140 countries (including every member country in the OECD besides the United States) has implemented a VAT, although the countries have generally done so to supplement, rather than replace, their income tax system.[33] Although there are several ways to compute the taxable base for a VAT, the amount of value added generally can be thought of as the difference between the value of sales (outputs) and purchases (inputs) of a business.

The concept of value added has broad application. In addition to being used in designing a tax base, it is used in the measurement of gross domestic product ("GDP"), one yardstick of the economic output of a nation. An understanding of how value added is used in national income and product accounting ("NIPA accounting") highlights two issues regarding the use of value added as a tax base: the difficulty of including non-market transactions in the tax base and the distinction between using income and consumption as the tax base.

GDP is defined as the total value of final goods and services produced in a country in a given year. Because GDP attempts to measure the market value of only final goods and services, simply adding together the market values of every firm's output overstates GDP if some of that output is used by other firms to produce final goods or services. For example, the total value of automobile production in a given year should not be included in GDP if some of those automobiles are sold to companies that lease them for rental use.[34] The correct measure of value to be included in GDP is the value of automobile production for consumer use plus the value of the rental services provided by the automobile owned by the leasing companies. To obtain a correct measure of automobile production, national income accounts must subtract the value of the production of automobiles that were used as intermediate goods by the leasing company.

Value-added accounting provides a way to measure GDP that, at least in theory, avoids the problem of double-counting the value of intermediate goods and services without forcing one to identify the final use of a good or service. Each firm's contribution to GDP is measured as the difference between the value of outputs and inputs. In the above example, the value added by the automobile manufacturer is the value of the automobiles produced both for consumer use and

[33] For a more comprehensive discussion of the VAT, including how they are employed in other countries, see Alan Schenk, Victor Thuronyi, and Wei Cui, *Value Added Tax: A Comparative Approach*, Cambridge University Press, 2015.

[34] For purposes of this example, assume that: (1) there are only two uses of automobile output (purchases by consumers and leasing by companies), (2) the rental services are provided to consumers and are not an intermediate good to other businesses, and (3) the leasing companies lease only new automobiles and only for a single year.

for leasing, minus the value of all inputs. The value added by the leasing company is the value of the rental services it provides minus the value of all inputs (including the automobiles it purchased from the manufacturer). The automobiles that are intermediate goods (*i.e.*, acquired by the leasing company for use in its business) are netted out (*i.e.*, treated as output by the manufacturer and as an input by the lessor) in the GDP calculation. When similar value-added calculations are done for all firms in the economy, the resulting total is the value of all final goods and services produced in that year, which is the desired measure of GDP.

Measured GDP underestimates "true" economic output if some producers' value added is not counted.[35] For NIPA accounting, goods and services that are provided in non-market transactions are generally not included in GDP. For example, someone painting his or her own home is producing painting services, but GDP only includes the value of the paint, paintbrushes, and other materials that are acquired and used; it does not include the value of the labor.[36] There is no market transaction with respect to "do it yourself" labor, so the labor is not taken into account in measuring GDP. Even if the labor services are observed, their value may be difficult to measure.[37] Similarly, it is difficult to levy a VAT on non-market transactions because they are unobserved or difficult to value, a problem also inherent in the current income tax.

A second point to note is that in NIPA accounting, value added is a measure of income, not consumption. GDP is the measure of final output produced in a given year, and as such it is a measure of the income of the economy. The amount of consumption in the economy differs from its income by the amount of gross saving done in the year.

A VAT is generally thought of as a consumption tax. As described in greater detail in Part IV.A of this pamphlet, what makes a VAT a consumption tax is not necessarily its use of value added as a base, but its use of cash-flow accounting principles to measure value added. In contrast, NIPA accounting uses accrual accounting principles to measure value added, and thus ends up with an income base.

### 2. Methods of determining value added

The amount of value added may be determined under a VAT in a number of ways. These include the credit-invoice method, the subtraction method, and the addition method. The credit-invoice method has been the system of choice in nearly all countries that have adopted a VAT. A subtraction-method VAT is also known as a business transfer tax.

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[35] As the following discussion points out, many of these firms may be individuals providing services to themselves for their own efforts.

[36] This example assumes that all of those materials were purchased in the year that the house was painted. Those materials are included in that year's GDP because their sale is treated as the sale to a final consumer. In some sense, the individual is a firm that is producing the services of housepainting. The materials are the inputs and the value of the housepainting is the output. The difference between the value of the housepainting and the cost of the acquired materials is the value of the labor in painting the house and is the amount of the "value added."

[37] In this particular example, however, it may be possible to use, as a proxy, the value of similar services provided by a firm in the business of housepainting.

**Credit-invoice method VAT**

Under the credit-invoice method, a tax is imposed on the seller for all of its sales. The tax is calculated by applying the tax rate to the sales price of the good or service, and the amount of tax is generally disclosed on the sales invoice. A business credit is provided for all VAT levied on purchases of taxable goods and services (*i.e.*, "inputs") used in the seller's business. The ultimate consumer (*i.e.*, a non-business purchaser), however, does not receive a credit with respect to his or her purchases. The VAT credit for inputs prevents the imposition of multiple layers of tax with respect to the total final purchase price (*i.e.*, a "cascading" of the VAT). As a result, the net tax paid at a particular stage of production or distribution is based on the value added by that taxpayer at that stage of production or distribution. In theory, the total amount of tax paid with respect to a good or service from all levels of production and distribution should equal the sales price of the good or service to the ultimate consumer multiplied by the VAT rate.

In order to receive an input credit with respect to any purchase, a business purchaser is generally required to possess an invoice from a seller that contains the name of the purchaser and indicates the amount of tax collected by the seller on the sale of the input to the purchaser. At the end of a reporting period, a taxpayer may calculate its tax liability by subtracting the cumulative amount of tax stated on its purchase invoices from the cumulative amount of tax stated on its sales invoices.

**Subtraction-method VAT**

Under the subtraction method, value added is measured as the difference between a business's taxable sales and its purchases of taxable goods and services from other businesses. At the end of the reporting period, a rate of tax is applied to this difference in order to determine the tax liability. The subtraction method is similar to the credit-invoice method in that both methods measure value added by comparing outputs (sales) to inputs (purchases) that have borne the tax. The principal difference between subtraction method and the credit-invoice method is that, under the subtraction method, the tax rate is applied to a net amount of value added (sales less purchases) rather than to gross sales with credits for tax on gross purchases (as under the credit-invoice method). The determination of the tax liability of a business under the credit-invoice method relies upon the business's sales records and purchase invoices, while the subtraction method may rely upon records that the taxpayer maintains for income tax or financial accounting purposes.

The subtraction method may allow more flexibility in determining the amount of value added for a taxable period. For example, capital costs may be either expensed or amortized under the subtraction method. The credit-invoice method, by allowing a credit for the tax paid with respect to capital equipment in the year of purchase, effectively provides for expensing. Similar issues arise with respect to inventory valuation methods, installment sales reporting, long-term contract reporting, the treatment of bad debts, or other attempts to match the recognition of revenues or costs with a specific accounting period.[38]

[38] To the extent costs are amortized or deferred under the subtraction method, the VAT is income based.

**Addition-method VAT**

The addition method, like the subtraction method, attempts to measure value added with reference to existing income tax or book accounting records, rather than with reference to the sales and purchase invoices on which the credit-invoice method relies. Specifically, the addition method adds together the taxpayer's inputs that are not purchased from other taxpayers (*e.g.*, wages, interest, and profits[39]) and applies a tax rate to such sum. In this regard, the addition method is a mirror image of the subtraction method in that it uses the items of production that the subtraction method ignores. It is for this reason that the subtraction and addition methods are often viewed as alternative, but essentially identical, methods of determining value added. Because of the similarity between the subtraction and addition methods, except as explicitly provided, the addition method is not considered further in this pamphlet. For these and other reasons, the addition method is similarly ignored in other commentary on the appropriate method with which to calculate value added.

**3. Exclusions under a VAT**

Most VATs adopted to date provide special treatment for imported and exported goods and services.[40] In addition, most VATs provide exclusions for various goods and services, or classes of taxpayers, for economic, social, or political reasons. Certain goods and services are also excluded from the VAT due to difficulties in measuring either the amount of the value added or the element of consumption (as opposed to the investment element) with respect to the good or service.

Policymakers may exclude goods, services, or classes of taxpayers from a VAT either by providing a "zero rating" or an exemption. There may be significant differences between these two alternatives, particularly under the credit-invoice method. If a sale is zero-rated, the sale is considered a taxable transaction, but the rate of tax is zero percent. Sellers of zero-rated goods or services do not collect or remit any VAT on their sales of those items but are required to register as taxpayers. In this way, sellers of zero-rated items are able to claim credits (and perhaps a refund to the extent the taxpayer does not have taxable sales) for the VAT they paid with respect to purchased goods and services.

Similarly, a seller of goods or services that is exempt is not required to collect any VAT on its sales. However, because such sellers are not required to register as taxpayers under the VAT system, they may not claim any refunds of the VAT that they may have paid on their purchases. In addition, under the credit-invoice method, purchasers of exempt goods or services

[39] It should be noted that under a consumption-based VAT, "profit" is not net income as calculated for income tax or financial accounting purposes, but rather is net cash flow. Such a definition of "profit" is necessary if the VAT is intended to be a consumption-based, rather than an income-based, tax. Because the determination of this profit element involves a calculation similar to that required under the subtraction method, the addition method generally is not considered to have any administrative advantages over the subtraction method for purposes of determining the value added by a for-profit entity.

[40] See the discussion in Part IV.C for the general treatment of imported and exported goods and services under consumption taxes.

are generally not allowed a credit for any VAT borne with respect to such goods or services prior to the exempt sale. Consequently, a VAT exemption, as opposed to a zero rating, in a credit-invoice system breaks the chain between inputs and outputs along the various stages of production and distribution and may result in a cascading of the tax (*i.e.*, total tax collected from all stages of production exceeds the retail sales price of the good times the VAT rate). For this reason, most VAT commentators, while recognizing that exemptions may be useful in easing the administrative and recordkeeping burdens of certain targeted taxpayers or transactions (such as small businesses or casual sales), prefer zero rating as a method of providing VAT relief under the credit-invoice method.[41]

In general, most VAT commentators agree that the most efficient VAT is one that has a minimum amount of exclusions.[42] Under such a broad-based VAT, the credit-invoice and subtraction methods operate in much the same manner. The commentators also agree that to the extent exclusions are provided, zero rating is preferable to exemption and the credit-invoice method is more amenable to zero (or multiple) rating because the credit-invoice method allows the character of the good or service (and the appropriate tax treatment) to be determined at the time of sale.[43] The resulting invoice documents such determination contemporaneously. However, to the extent exemptions are preferable to zero rating (*e.g.*, if one wanted to provide administrative relief for small businesses that provide goods and services at an intermediate stage of production or distribution), the subtraction method may be preferable to the credit-invoice method in order to avoid the cascading of the VAT.

**4. Border adjustments**

A VAT based on the destination principle imposes tax on imports and provides tax rebates on exports. These import charges and export rebates are commonly referred to as "border adjustments" and are a part of nearly all VAT systems currently in place.[44]

Under the border adjustments, exported goods are not subject to the VAT through zero-rating the sale of exported goods (*i.e.*, by applying a VAT rate of zero to exports, thus allowing the exporter to claim refundable credits for VAT paid with respect to the purchased inputs). On the other hand, importers are subject to tax on the full value of imported goods (because inputs

[41] See Alan Schenk, Victor Thuronyi, and Wei Cui, *Value Added Tax: A Comparative Approach*, Cambridge University Press, 2015.

[42] See Ian Crawford, Michael Keen, and Stephen Smith, "Value Added Tax and Excises," in *Dimensions of Tax Design*, Stuart Adam, Timothy Besley, Richard Blundell, Stephen Bond, Robert Chote, Malcolm Gammie, Paul Johnson, Gareth Myles, and James Poterba (eds.), Institute for Fiscal Studies, Oxford University Press, 2010 pp. 275-422.

[43] See Alan Schenk, Victor Thuronyi, and Wei Cui, *Value Added Tax: A Comparative Approach*, Cambridge University Press, 2015.

[44] See Part IV.C for a discussion of border adjustments under a consumption tax.

with respect to such products had not been subject to the VAT). Similar treatment is provided for imported and exported services.[45]

Border adjustments are fully consistent with World Trade Organization ("WTO") rules, as long as they do not discriminate against imports or provide over-rebates to exports. Relief from indirect taxes on exports does not constitute an illegal export subsidy, while relief from direct taxes (such as income taxes) is illegal. Indirect taxes are defined to include value-added taxes, and credit-invoice VATs have been accepted as border-adjustable by the WTO. However, the distinction between direct and indirect taxes, especially in the context of proposals to replace an income tax with a consumption tax, may be artificial to the extent that it may be possible to structure certain direct taxes as economically equivalent indirect taxes (*i.e.*, indirect taxes with the same economic incidence as the direct taxes).

**5. Visibility**

In the case of a sale to another business, the seller is required to state the amount of VAT in order for the purchaser to be able to claim a credit for the tax under the credit-invoice method. Because consumers cannot claim VAT credits with respect to their purchases, it is not necessary to disclose the amount of VAT on the retail sales invoices. Indeed, some countries have prohibited the disclosure of VAT on consumer sales. Such a rule requires sellers to determine the status of purchasers at the point of sale. Similar issues arise with respect to State and local sales taxes.

Under the subtraction method, it is unclear whether and how a seller states the amount of tax applicable to a particular sale on the sales invoice, since the seller's tax liability is not necessarily dependent upon its sales records. For this reason, it has been suggested that a subtraction-method VAT is more likely to be a "hidden tax" that may not be salient to consumers.[46] However, as alluded to earlier, a credit-invoice VAT may also be a "hidden tax" if policymakers decide to prohibit disclosure of VAT on consumer sales. The general lesson may be that, as a starting point, a subtraction-method VAT may be less visible than a credit-invoice method VAT, but policymakers have latitude in determining the visibility (or lack thereof) of the tax under either method.

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[45] The cross-border provision of services presents difficult issues under any VAT. Services may be performed in whole or in part in one jurisdiction and used in another. To make things concrete, consider a hypothetical VAT implemented in the United States. Theoretically, (1) services performed by a person outside the United States but "used" in the United States are subject to the U.S. VAT, (2) services performed by a U.S. person but "used" in a foreign country are not subject to the U.S. VAT, and (3) the value of services used inside and outside the United States are allocated between the two jurisdictions based on the relative values of such services. In the case of services, as demonstrated by administrative difficulties surrounding section 482 of the Code, the identification, measurement, and valuation of "use" is difficult. Certain services that are provided both inside and outside the United States, such as international transportation or communication, could be allocated pursuant to statutory (although somewhat arbitrary) ratios, as under the current income tax. The resolution of the issues related to the cross-border provision of services is beyond the scope of this pamphlet.

[46] See U.S. General Accounting Office, *Tax Credit and Subtraction Methods of Calculating a Value-Added Tax*, GAO/GDD-89-87, June 1989, p. 25.

## 6. Interaction with State and local taxes

Traditionally, State and local governments have imposed retail sales taxes on goods and services acquired within their jurisdiction. Imposition of a Federal VAT and the method used to compute the VAT may have a direct effect on State revenues. First, a determination must be made as to whether the taxable base for the Federal VAT includes separately-stated State or local taxes. Second, if the Federal VAT is determined under the credit-invoice method, State and local governments must determine whether to include the Federal tax in their taxable base (assuming that nothing in the Federal statute preempts State and local governments from "piggybacking" the Federal VAT). However, if the Federal VAT is determined under the subtraction method, the Federal VAT may be incorporated into the price of the good or service under market forces and the State and local tax is automatically piggybacked on the Federal tax. Finally, imposing a Federal VAT on goods and services may create complexity to the extent that State and local governments provide sales taxes on different bases. However, one study exploring the Canadian experience with the VAT suggests that the introduction of a VAT in the United States would not create significant technical problems for either States or businesses.[47]

[47] Richard M. Bird, Jack M. Mintz, Thomas A. Wilson, "Coordinating Federal and Provincial Sales Taxes: Lessons from the Canadian Experience," *National Tax Journal*, vol. 59, no. 4, December 2006, pp. 889-903.

## B. Flat Tax

A "flat tax" is generally any tax system with only one marginal tax rate.[48] For example, one could construct a flat tax out of the current individual income tax by eliminating all but one marginal rate bracket and repealing provisions that impose higher effective marginal rates by reducing other deductions or exclusions (*e.g.*, the personal exemption phase-out and the limitation on itemized deductions). While such a tax is a flat tax on the basis of its single rate bracket, it may still contain dozens of tax expenditure provisions, including the home mortgage interest deduction, the charitable contribution deduction, the deduction for State and local income taxes, the earned income tax credit, and the dependent care credit. These special provisions (including exclusions for certain kinds of income, tax credits and deductions, and tax deferral provisions) were added by Congress to the Code over the years to promote particular kinds of activities or provide relief to particular kinds of taxpayers.

Many of the flat tax proposals that have been developed do more than simply apply one rate to the current individual income tax base. In addition, they redefine the base of the tax. There are two main approaches: a consumption base and an income base. The gross income of a taxpayer in any year is simply the sum of the taxpayer's consumption and gross saving. Thus, the difference between these two bases is in the treatment of saving. An income-based tax includes the return to saving in the tax base, while a consumption tax base does not. Either a consumption base or a comprehensive income base represents a significant departure from the current individual income tax base, which contains elements of both income and consumption bases.[49]

An example of a flat tax with a consumption tax base is the Hall-Rabushka flat tax.[50] The Hall-Rabushka flat tax has two components: a flat tax on business cash flow and a flat tax on individual compensation. The tax rates applied to business cash flow and individual compensation are equal. Businesses, of all entity classifications (C-corporations, partnerships, sole proprietorships, *etc.*) are taxed, at a single rate, on their cash flow, which consists of sales minus purchases from other businesses and the wages they pay, and the pension benefits they provide, individuals for their labor services. Employer contributions to Social Security, health insurance, and other non-pension benefits are not deductible by businesses. Individuals are taxed at a single rate on the wages and pension benefits they receive as compensation for their labor services. That single rate does not apply to the first dollar of compensation they receive, however. The Hall-Rabushka flat tax includes an exemption that varies by the filing status of individuals and the number of dependents they have. Interest, capital gains, dividends, rents, and royalties are excluded from the tax base under the Hall-Rabushka flat. With regards to cross-

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[48] A bracket with a marginal rate of zero could also be provided by allowing a standard deduction and personal exemptions. As long as only one bracket has a marginal tax rate greater than zero, the tax is commonly referred to as a flat tax.

[49] For a discussion comparing income-based and consumption-based taxes, see Part IV.A of this document.

[50] Robert E. Hall and Alvin Rabushka, *The Flat Tax*, Hoover Institution Press, 1995.

border transactions, the Hall-Rabushka proposal is origin-based, so that tax is imposed on goods and services produced in the United States, thereby including exports but excluding imports.

### C. X-Tax

A proposal similar to the Hall-Rabushka flat tax is the X-tax, proposed by David Bradford.[51] A number of variants of the X-tax have been proposed over time, but the basic X-tax consists of two components: a flat tax on business cash flow and a graduated-rate tax on individual compensation.[52] The graduated-rate tax on individual compensation is one of the main features of the X-tax that distinguishes it from the Hall-Rabushka flat tax, which taxes individual compensation at a single rate. Businesses, regardless of entity classification, are taxed at a single rate on their sales, less compensation to workers and purchases from other businesses. Compensation under the X-tax is broader in scope than compensation under the Hall-Rabushka proposal, and, in addition to wages and pension benefits, may include non-pension benefits such as employer-provided health insurance. Individuals are taxed on compensation received from businesses under a progressive rate structure with a zero bracket amount and a top rate that is equal to the business tax rate. However, a refundable earned income tax credit may be available to individuals under the X-tax. Business income earned by individuals is subject to the business cash flow tax and not the individual tax. Financial transactions—such as payments of interest and dividends—are excluded from both the business and compensation tax bases.

With regards to cross-border transactions, the X-tax could be implemented on either a destination-basis or origin-basis.[53] A destination-based X-tax imposes tax on goods and services in the country where they are bought, so that imports are subject to tax while exports are exempt from tax. In contrast, an origin-based X-tax imposes tax on goods and services in the country in which they are produced, so that exports are taxed while imports are exempt from tax.[54]

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[51] David F. Bradford, *Untangling the Income Tax*, Harvard University Press, 1986; David F. Bradford, *Fundamental Issues in Consumption Taxation*, American Enterprise Institute Press, 1996; and David F. Bradford, "A Tax System for the Twenty-First Century," in Alan J. Auerbach and Kevin A. Hassett (eds.), *Toward Fundamental Tax Reform*, American Enterprise Institute Press, 2005, pp. 11-33.

[52] See *ibid* for a discussion of variants to the X-tax that have been proposed by David Bradford. Another X-tax proposal has been developed in Robert Carroll and Alan D. Viard, *Progressive Consumption Taxation: The X Tax Revisited*, AEI Press, 2012.

[53] David F. Bradford, *The X Tax in the World Economy: Going Global with a Simple, Progressive Tax,* AEI Press, 2004. David Bradford proposed that the X-tax be implemented on an origin basis.

[54] To the extent that the X-tax is considered a direct tax, a border adjustment for a destination-based X-tax may be illegal under WTO rules, although it may be possible to structure an economically equivalent tax that is considered an indirect tax by the WTO. For an example of such a proposal, see Itai Grinberg, "Implementing a Progressive Consumption Tax: Advantages of Adopting a VAT Credit-Method System," *National Tax Journal*, vol. 59, no. 4, December 2006, pp. 929-954. No country has implemented an X-tax (on either an origin or destination basis), so there are no cases concerning the legality of border adjustments for a destination-based X-tax.

## D. National Retail Sales Tax

### 1. Description of retail sales taxes and background

As the name implies, a retail sales tax is a tax imposed on the retail sales price (*i.e.*, sales to consumers) of taxable goods and services.

As described in Part II.E, above, the Federal government currently imposes excise taxes on various products and services.[55] However, these taxes generally apply to a narrowly defined class of goods and services, and are generally not imposed at the retail level. Rather, Federal excise taxes are generally imposed on manufacturers (as in the case of alcohol and tobacco excise taxes) or at some other intermediate (pre-retail) stage of the distribution of the product (as in the case of the highway motor fuels tax), or are imposed on both the consumers and business users of a good or service (as in the case of the air passenger ticket tax).

Most States and many local governments impose general sales taxes within their jurisdictions, and all States impose some form of excise-type tax on specified goods or services.[56] Although the typical State sales tax is familiar to most consumers and appears simple on its face, several issues may arise in the application of such a tax. First, State sales taxes are generally designed to apply to most tangible personal property and selected services purchased by consumers. Persons other than consumers (*i.e.*, businesses) may be exempted from the tax in a variety of ways. Exemptions may be provided for goods acquired as "sales for resale," or for articles for use in manufacture, fabrication, or the processing of personal property for resale, if the article becomes incorporated in such property. Thus, persons who are not consumers may be subject to the sales tax in certain instances. For example, a furniture maker may be exempt from tax on lumber acquired to manufacture chairs but may not be exempt from tax on a truck purchased to deliver the chairs to customers. Controversies often arise as to whether an article or a service (such as packaging or utility services) are incorporated into a good or not.[57] Most States also provide exemptions for acquisitions by the State and its political subdivisions, and charitable, religious, and educational organizations. In order to address the regressivity of sales taxes, most States exempt food but do tax candy, soda, and prepared meals, thereby requiring distinctions between taxable and tax-exempt items. Similarly, most States do not tax sales of intangible property, raising issues as to whether a particular item represents taxable tangible or tax-exempt intangible property. Moreover, most States provide broad taxation of personal property, but only limited taxation of services, raising issues whenever a business provides both taxable goods and exempt services to a customer. For example, an automotive repair shop typically provides both goods (replacement parts) and services (labor on installation of the parts)

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[55] For a description of the various Federal excise taxes, see Joint Committee on Taxation, *Present Law and Background Information on Federal Excise Taxes* (JCX-99-15), July 13, 2015.

[56] Forty-five States have a State sales tax, and many have local taxes in addition to the general State sales tax. For more information, see the homepage of the Federation of Tax Administrators at http://www.taxadmin.org/.

[57] See, for example, *Sta-Ru v. Mahin*, 64 Ill. 2d 330 (1976) and *Burger King v. State Tax Commission*, 51 NY 614 (1980) (whether paper and plastic cups and similar items purchased by a fast-food restaurant are subject to State sales taxes).

when it repairs an automobile. Finally, State sales taxes generally do not apply to goods shipped to out-of-State customers. In such cases, the customer is likely subject to complementary "use" tax in his or her State of residence. However, there are significant compliance problems with State use taxes. Several States mail use tax forms to all State income taxpayers and rely upon voluntary reporting of taxable out-of-State purchases.

**2. Considerations with respect to a retail sales tax**

In general, the burden of a consumption tax is thought of as being borne by the ultimate consumer of the taxed goods, regardless of where in the production and distribution chain the tax is levied. Accordingly, a retail sales tax may have approximately the same economic burden as a VAT.[58] Moreover, the tax base on which a retail sales tax is assessed can be chosen to be identical to that used for any VAT. This being the case, it is instructive to examine how a retail sales tax compares to a VAT in terms of administrability, compliance burden, and ease of implementation.

The choice of a retail sales tax to implement a consumption tax may be attractive because the start-up and overall compliance costs of the tax could be small compared to those for a VAT. Part of the reason for these relatively low costs is that a retail sales tax involves only entities that sell directly to end users of the taxed goods or services. This means that the number of taxpayers involved in retail sales tax is small compared to the number of taxpayers involved in a VAT, which makes taxpayers of all parties involved in the entire production and distribution process. Limiting the number of taxpayers limits the aggregate amount of recordkeeping needed to implement a retail sales tax. In turn, this limit the total cost of the tax system to both the government and taxpayers.

Implementation of a Federal retail sales tax may draw on some of the experiences of State and local governments.[59] This experience should indicate who the taxpayers are under a Federal retail sales tax and perhaps also provide a source of trained tax administrators for the Federal government. A Federal retail sales tax need not utilize the same tax base as that used by any State or local government, and, in fact, a Federal tax might well utilize a base broader than used by any State or local tax. The implementation might be slowed if the tax base for a Federal retail sales tax is substantially different from that used by any State or local government.

Although tax collection and administration synergies may develop if both States and the Federal government have retail sales taxes, this does not mean that one government could or should be the tax collector for the other. First, it is likely that the bases of the tax are different. Indeed, five States have no general sales taxes at all. Second, if the States were to collect the Federal tax, similarly situated taxpayers may be treated differently to the extent that one State's collection efforts or interpretation of the Federal law is different than that of another State. If the

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[58] For a discussion of the incidence of, and equivalence among, consumption taxes, see Part IV.A of this document.

[59] For a discussion of Federal and State intergovernmental issues with respect to a consumption tax, see Charles E. McLure, Jr., "State and Local Implications of a Federal Value-Added Tax," *Tax Notes*, March 28, 1988.

Federal government were to collect the States' taxes, the Federal government may be involved in disputes as to the proper allocation of the tax with respect to interstate transactions. Further, there are no indications that demonstrate that integrate collection would be successful. Many States impose income taxes that are based on Federal income tax law or concepts. However, the collection and enforcement of Federal income taxes are separate from that of State income taxes.

The retail sales tax may have a number of drawbacks that are worth further examination. For instance, the retail sales tax imposes tax at only a single stage in the production and distribution chain. This may increase the opportunity for the evasion of the entire tax when just one party (the retailer) fails to meet their taxpaying duty. As described in Part III.A, above, a VAT (particularly a credit-invoice VAT) may be self-enforcing to a certain extent. The complete amount of tax is evaded only when there is some coordination between parties at different stages of the production and distribution chain (*e.g.*, sales of goods and services that are not used as a further part of the production process).[60]

A potential source of controversy might be the designation of persons that can make purchases on a tax-exempt basis from retail outlets. For example, a retail sales tax should exempt purchases by other businesses to avoid cascade effects. This could be accomplished in a number of ways. For sales tax purposes, many States issue identification numbers to businesses to allow them to be exempt from tax on their purchases. However, this approach may invite abuse, for example, in the case of self-employed individuals or closely-held businesses where the self-employed person or business owner could use the tax exemption to acquire goods for personal use on a tax-free basis. Alternatively, it may be appropriate to tax all sales from retail outlets and establish a refund system to enable exempt purchasers to claim refunds for taxes paid on purchases of goods and services that were used as part of the production process (*i.e.*, establish a process that resembles the mechanism of the credit-invoice VAT described in Part III.A of this document). Similarly, a determination may have to be made as to the tax treatment of used property and casual sales.

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[60] If credits are refundable in a credit-invoice system, then it may be possible, in some instances, to evade the complete tax through actions taken at the last stage in the production and distribution chain (*e.g.*, by underreporting taxable sales).

# IV. ANALYSIS OF ISSUES

## A. Equivalence of Different Types of Consumption Taxes

**In general**

To understand the economic effects of a tax, one can start by examining the base of the tax, that is, what goods, services, or activities are subject to the tax. Looking at the proposed replacements for the current income tax that were discussed in Part III, one sees that their bases are consumption, rather than income. The similarity of the tax base of the proposals may not be apparent at first glance, since they take different routes to tax that base. This section discusses how outwardly different forms of taxation such as VATs, the Hall-Rabushka flat tax, the X-tax, and a retail sales tax can all be seen as variants of a tax on consumption.[61] All the proposals fundamentally aim at taxing the same base, although they may tax that base, or parts of that base, differently. (For simplicity, the comparisons that follow ignore how financial transactions are treated under a VAT, the Hall-Rabushka flat tax, and X-tax.)

**Equivalence of the VAT, the Hall-Rabushka flat tax, and the X-tax**

As described in Part III.A, the base of a VAT can be thought of as the difference between the value of output sold by a business minus the value of inputs that it purchased from other businesses. Although labor services may have been used to generate that output, compensation for labor services is neither deductible by businesses nor includible by individuals under a VAT. It is worth noting two components of the tax burden borne by an individual under a VAT.[62] One component is associated with their purchase of goods and services from businesses; higher VAT rates may be passed through to consumers in the form of higher prices. Another component is tied to the amount of compensation they receive from businesses. To understand this latter component, note that, under certain economic conditions,[63] an economically identical tax system ("modified tax system") to the VAT is one that modifies the VAT by allowing businesses to deduct compensation to individuals, who are then taxed on their compensation at the same rate as the VAT (with no standard deduction or personal exemptions). Even though compensation is includible in the individual tax base under this modified tax system, it can be deducted by businesses. Since, for a given level of compensation, the after-tax cost of compensation in this modified system is greater than the after-tax cost of compensation under a VAT, standard economic theory predicts that businesses will increase compensation to employees, with the increase enough to offset the increase in taxes that individuals pay in this modified tax system relative to a VAT system, leaving them with the same after-tax compensation as under a VAT. In other words, the fact that individuals pay tax on their compensation under this modified

[61] For a useful calculation relating the income tax, flat tax, and VATs, see Joel Slemrod, "Deconstructing the Income Tax," *American Economic Review Papers and Proceedings*, vol. 87, no. 2, May 1997, pp. 151-155.

[62] A component not discussed includes the tax burden an individual bears as the owner of a business.

[63] For example, one assumption is that businesses with negative cash flow can be refunded for an amount equal to their negative cash flow multiplied by the VAT rate.

system, but not under the VAT, does not change after-tax compensation as one moves from a VAT to this modified tax system.

With this modified tax system in mind, one can see how the Hall-Rabushka proposal taxes the same base as the VAT, but approaches taxation of that base differently. The key operational difference between the Hall-Rabushka flat tax and the VAT is that, under the Hall-Rabushka flat tax, businesses can deduct compensation paid to employees, who are then taxed separately on their compensation at the same tax rate applied to business cash flow. A standard deduction and personal exemptions are allowed for individuals under the Hall-Rabushka flat tax, thereby creating a zero-rate bracket on individual compensation. Therefore, the base of the VAT is the same as the base of the Hall-Rabushka flat tax, except that the Hall-Rabushka proposal imposes a zero rate on a certain portion of the compensation an individual receives (corresponding to the standard deduction and personal exemptions).

Moving from the Hall-Rabushka flat tax to the X-tax, one can see that they tax the same base. One key difference between the X-tax and the Hall-Rabushka flat tax is that the X-tax does not apply a single tax rate on compensation (above the zero-rate bracket).[64] Instead, it has a graduated rate schedule, with a top marginal tax rate equal to the single tax rate imposed on business cash flow. Therefore, as a structural matter, the base of the X-tax is the same as the base of the Hall-Rabushka flat tax, except that the X-tax taxes compensation at a graduated rate (instead of at a flat rate).

**<u>Point-of-sale consumption taxes</u>**

The retail sales tax is perhaps the easiest to see as a tax on a consumption base. If all final consumption (goods and services purchased for final use by households) is subject to the tax and no intermediate goods and services (those purchased by businesses and used to produce other goods and services) are subject to the tax, then a retail sales tax is tautologically a consumption tax. In practice, existing State sales taxes deviate from this comprehensive consumption base by exempting certain goods and failing to tax many services provided to households.[65]

A broad-based, credit-invoice VAT achieves the same end as a retail sales tax even though it appears to be collecting tax at many stages of production rather than only at the time of final sale to a household.[66] From the perspective of the tax system as a whole, any time a sale is made from one business to another, the inclusion of the sale proceeds into the seller's tax base is offset by a deduction from the purchaser's tax base for the cost of the input. For a business-to-business sale, there is no net tax collected (although there may be payments going between

[64] As mentioned in the descriptions of the Hall-Rabushka flat tax and X-tax in Parts III.B and III.C, respectively, the X-tax may also have a broader definition of compensation than the Hall-Rabushka flat tax, but that does not affect the conclusions of this section.

[65] A more subtle divergence is that business purchases of intermediate goods, especially by small businesses, may be subjected to the retail sales tax.

[66] See Part III.A.2 for a more detailed discussion of the operation of a credit-invoice method VAT.

business and the government). It is only at the time a sale is made to a non-business purchaser (*i.e.*, a household) that a net tax is collected, because the inclusion of the sale proceeds is not offset by another business's deduction. That result is identical to what occurs under the retail sales tax: tax is collected only at the time of a final sale to a household. The same argument applies to a broad-based, subtraction-method VAT: net tax is collected only at the time of a final sale to a household.[67]

**<u>Individual consumption taxes</u>**

Instead of measuring consumption by households at the point of sale, one could impose a consumption tax through annual returns on individuals' finances. This individualized approach may be useful if one were attempting to increase the progressivity of the consumption tax through the provision of standard deductions and personal exemptions or through the taxation of compensation at graduated rates.

<u>Cash-flow approach</u>

A way to measure consumption that would operate on annual returns would calculate a cash-flow base based on the fact that consumption equals income minus net saving. A cash-flow base includes income from all sources and allows deductions for saving, resulting in only consumption being subject to tax. Such an approach is similar to the treatment of deductible IRAs under present law. Taxpayers deduct contributions to qualified accounts in the year they make contributions, but upon withdrawal they include in income the entire amount withdrawn. A cash-flow consumption tax treats all saving as if it were done in a qualified account. Loan proceeds are included in the tax base and a deduction is allowed for payments of both interest and loan principal.

The effect of cash-flow treatment is that the taxpayer receives a tax-free return on his saving, assuming the tax rate is the same at the time of deduction and withdrawal. The following example illustrates how the cash-flow approach (initial deduction plus inclusion of all proceeds) results in the exemption from tax of the return to saving. Assume that the marginal tax rate is 20 percent and the taxpayer saves $1,000 of his $25,000 income in a savings account. The $1,000 of savings gives the taxpayer a $1,000 deduction and thereby reduces the taxpayer's tax liability by $200 (20 percent of $1,000). Assume that the taxpayer withdraws the savings (plus interest) one year later. If the account yielded a five-percent rate of return, the taxpayer withdraws $1,050. The withdrawal is included in the tax base and is taxed at the 20-percent rate, for an extra tax liability of $210, leaving the taxpayer with net proceeds of $840. Notice that if the taxpayer had initially paid the tax of $200 (tax on the $1,000 deposited in the savings account if saving were not deductible) and invested the remaining $800 at five percent, he also would have had net proceeds of $840 if interest income were not subject to tax. The combination of a

[67] See Part III.A.2 for a more detailed discussion of the operation of a subtraction-method VAT.

deduction for saving and inclusion of all proceeds in the base upon withdrawal from the qualified savings account has the same result as exempting from tax the return on saving.[68]

Tax prepayment approach

Another way to implement a consumption tax is to include in the base only earned income. This "tax prepayment" approach[69] treats all savings as coming from after-tax dollars. Taxpayers claim no deduction for savings, but their returns to saving, whether in the form of interest, dividends, rents, royalties, or capital gains, are excluded from the base of the tax and thus are received tax-free. Therefore, the tax treatment of savings under the tax prepayment approach resembles the tax treatment of Roth IRAs under present law. In terms of the previous example, a taxpayer initially pays tax of $200 on the $1,000 he sets aside from current consumption. When he withdraws the $840 in the following year (the $800 he was able to put in the account plus a five-percent return), none of that is included in the tax base. This tax prepayment approach is generally used in the individual portions of the Hall-Rabushka flat tax, in which the individual portion of the tax includes only wage and salary income plus pensions[70] in the tax base. The X-tax also adopts a tax prepayment approach: individual compensation (including pension benefits received from employers) is taxable for individuals, while the returns to savings are excluded from the tax base since financial transactions are ignored.

**Relationship between income and consumption bases**

While the term "income" may suggest funds coming into an individual (the "factor payments" view of income[71]), the theoretical underpinning for the income tax relies on a "uses" definition of income. The Haig-Simons definition of income,[72] commonly used by economists, defines income for a period as the "total value of rights exercises in the market, together with the accumulation of wealth in that period," that is, the value of consumption plus the change in net wealth for the period. Since the change in net wealth for an individual is the amount of saving (or dissaving, if net wealth decreases) for the period, an equivalent way to restate an income base

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[68] From the government's point of view, the cash-flow approach makes it a partner in any saving done by the individual. The government forgoes the $200 of tax at the time the saving is done and collects a tax of $210 (equal to $200 plus five-percent interest) at the time the proceeds of saving are withdrawn. The $200 deduction for saving could be viewed as the government making a contribution to the individual's saving account. The size of the government share is equal to the marginal tax rate, in this example, 20 percent.

[69] It is sometimes described as a "yield exemption" approach.

[70] The treatment of pensions under the Hall-Rabushka flat tax differs from the tax prepayment approach. Pensions follow the principles of the cash-flow approach to a consumption base: the contributions to the pension during the individual's working years are excluded from the tax base and the pension payouts are included in the base when received.

[71] David F. Bradford, *Untangling the Income Tax*, Harvard University Press, 1986, p. 15.

[72] Robert M. Haig, "The Concept of Income: Economic and Legal Aspects," in Robert M. Haig (ed.), *The Federal Income Tax*, 1921, Columbia University Press; and Henry Simons, *Personal Income Taxation*, Chicago University Press, 1938.

is that it is consumption plus net saving. The difference between Haig-Simons income and consumption as the base of a tax is that a consumption base does not include changes in wealth (savings).[73] The present-law Federal tax system can be viewed as hybrid between a Haig-Simons income tax and a consumption tax because of the availability of tax-preferred retirement savings vehicles that exempt from tax the returns to saving, thereby narrowing the tax base so that it more closely resembles a consumption tax base.

**Lifetime correspondence of consumption taxes and wage taxes**

The equivalence of the cash-flow tax and prepayment approaches suggest a more general relationship between consumption taxes and taxes on labor income ("wage taxes"). Although wage taxes are not consumption taxes *per se*, they are often discussed in the context of consumption taxes because under certain conditions the two taxes are economically equivalent. Because economists stress the equivalence of these two taxes, it is important to understand the conditions under which equivalence holds.

Under a consumption tax (of either the point-of-sale type or the cash-flow individual type), all income is subject to tax except amounts equal to increases in net wealth (*i.e.*, saving). Under a wage tax (which is similar to the tax prepayment approach to a consumption tax), labor income (but not capital income) is subject to tax. It is also true that under a wage tax increases in net saving are exempt from tax. The key to the equivalence of the two taxes is the equivalent treatment of increases in net wealth.

To establish the equivalence, assume for the sake of simplicity that a taxpayer has no sources of wealth prior to the introduction of a consumption tax or wage tax. Increases in net wealth (except for gifts and inheritances) can arise only from either of two sources: savings out of capital income (sometimes known as "inside build-up") or savings out of labor income. The first type of increase in net wealth is exempt both under a consumption tax, because it is not consumed, and under a wage tax, because it is not earned from the performance of labor services. The second type of increase in net wealth, savings from wages, is taxed under a wage tax at the time of the act of saving (because the savings are made from after-tax wages), but it is exempt from tax when it is withdrawn to pay for consumption. Under a consumption tax, savings from wages is not taxed at the time of the act of saving (because those amounts are not devoted to current consumption, but to savings), but it is taxed when it is withdrawn to pay for consumption. With a tax rate that is constant over the individual's lifetime, the tax treatment of saving from capital income is exactly the same under consumption and wage taxation, and the tax treatment of saving from labor income is equal in present value under consumption and wage taxation. Therefore, from a lifetime perspective, a young person who neither receives nor grants bequests and who has yet to undertake any savings would be subject to the same economic burden under either a consumption or a wage tax.

[73] Income tax accounting under a Haig-Simons income tax system lends itself naturally to accrual-based accounting, since the tax base is the change in net wealth regardless of whether gain is realized.

For an example of this equivalence, suppose that all individuals live for two periods, earning wages of $10,000 in the first period and $11,000 in the second period.[74] Assume that the real interest rate is 10 percent and that the individuals may borrow or lend at this rate. This interest rate reflects the market price of deferring consumption from the first period to the second. That is, someone who chooses to give up $100 worth of consumption in the first period would be compensated by receiving $110 worth of consumption in the second period. The present value of the lifetime resources of an individual is $20,000. No individual can consume more than $20,000 (in present-value terms) over the two periods. If a 20-percent wage tax is levied, the individuals' net after-tax wages fall to $8,000 and $8,800 in the two periods, for a present value of $16,000.[75] The wage tax is equivalent to a 20-percent reduction (($20,000 – $16,000)/$20,000) in the lifetime resources available to the individual.

A proportional tax on consumption at a rate of 25 percent would be equivalent to the 20-percent wage tax.[76] To understand why, note that a 25-percent consumption tax means that for each $100 that the individual is willing to spend on consumption goods, only $80 worth of consumption goods can be purchased. The other $20 (25 percent of $80) is needed to pay the consumption tax. Thus a present value of lifetime resources equal to $20,000 will only be able to purchase a present value of $16,000 worth of consumption goods. But this is the same amount that could be purchased under the 20-percent wage tax. Therefore, the wage tax and the consumption tax are equivalent: they result in the same reduction in the present value of resources available for consumption.

With either tax, the price of shifting consumption between the two periods remains the same, so the individuals' choices about consumption and saving in the two periods are unchanged. Under the wage tax, if an individual saves an additional $100 in period 1, his tax liability is unchanged, and the proceeds of his saving will yield $110 from which to consume in period 2. Under the consumption tax, if an individual saves an additional $100 in period 1, his tax liability in that period falls by $25, so he can invest $125, yielding him a return of $137.50, which is just enough to purchase $110 of consumption and pay the tax thereon in period 2.

It is important in the above example that the rate of the consumption tax remains the same across the two periods. For example, taxing consumption in future years at a higher rate would reduce the return to savings. Taxing future consumption at a lower rate would subsidize savings.

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[74] These amounts are expressed in real dollars (*i.e.*, adjusted for inflation).

[75] The interest rate remains at 10 percent, as interest is untaxed under a wage tax.

[76] The distinction between these two tax rates is that the 25-percent consumption tax is stated on a tax-exclusive basis. That is, the tax is stated as a percentage of after-tax consumption. The rates of retail sales taxes are generally stated on a tax-exclusive basis. The 20-percent wage tax is stated on a "tax-inclusive basis." If the consumption tax were stated on a tax-inclusive basis, it would also be 20 percent; that is, the tax would be 20 percent of the amount spent on consumption inclusive of the tax. The rates of credit-invoice VATs are often stated on a tax-inclusive basis. The tax-exclusive rate = (tax-inclusive rate)/(1 – tax-inclusive rate) for two equivalent taxes.

The equivalence example given above looked at the consumption tax and wage tax in a steady state, with no sources of wealth in existence that preceded the introduction of either tax. In the long transition period to a consumption tax, however, there is substantial difference between wage taxation and consumption taxation for those with existing savings.[77] Because of the eventual taxation of these savings under a consumption tax as compared to their non-taxation under a wage tax, a consumption tax potentially would be more progressive than a wage tax. Although consumption taxes and wage taxes are considered economically equivalent in the long run, the differences in their incidence—especially their intergenerational incidence—can be substantial. Consumption taxes can impose a burden on existing wealth, while wage taxes do not.

Another way to express a consumption tax's implicit levy on existing wealth is that broad-based consumption tax is equivalent to a tax on wages plus a tax on income from existing capital (but exempting income from new investment). Since, in competitive markets, the real purchasing power of existing capital assets is equal to their (expected) future stream of income, taxing the existing capital is equivalent to taxing the income generated from that capital. This establishes the equivalence between a broad-based consumption tax and a tax on wages and the income generated by "old capital" (*i.e.*, any capital existing at the time of the introduction of the tax). Notice that under the tax on wages and income from existing capital, the returns to new investment are not taxed. Similarly, by taxing consumption at different times uniformly, a broad-based consumption tax effectively exempts the returns to savings from the tax base. In a closed economy, savings and investment are equal, confirming the equivalence of the taxes.[78]

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[77] One aspect of taxation of existing savings is considered in Part IV.D.1 under transition issues.

[78] In an open economy, foreign holders of U.S. assets are hurt by a tax on existing capital, but not by a consumption tax that increases the general domestic price level.

### B. Integration of Business and Individual Taxes

It is possible to enact an individual consumption tax of the cash-flow or tax prepayment type as a stand-alone tax without making changes to the taxation of businesses.[79] But some of the consumption tax proposals described in Part III, including the Hall-Rabushka flat tax and the X-tax, do more than just change the rates and the base of the individual income tax. These proposals also integrate business taxation and individual taxation through the application of a consumption tax on all businesses at the same marginal rate as that applied to individuals. Under present law, partnerships, subchapter S corporations, and sole proprietorships are already integrated into the individual income tax because of their passthrough treatment. For businesses organized under subchapter C, however, a separate, generally income-based tax applies in addition to taxation at the individual level of the returns from the business.

What makes a given business tax a consumption tax is its definition of the tax base according to what economists call cash-flow accounting principles. Under cash-flow accounting, businesses take immediate deductions for all business purchases, including capital assets and additions to inventory. By contrast, income taxes use accrual accounting principles to measure the base.[80] Cash-flow accounting principles treat business activity similar to the cash-flow approach to an individual consumption-based tax: savings is deducted from the base and returns to savings are included upon withdrawal.[81] In the business context, expenses in the current period that yield revenues in future periods are savings; those future revenues are the return to savings.

The differences between the cash-flow accounting principles and accrual accounting principles can be seen in the treatment of inventories and durable goods purchases. For example, if a pencil manufacturer produces pencils in a particular year that it does not sell in that year, under an income base the cost of producing the unsold pencils is capitalized and a deduction for the capitalized cost is not allowed until the pencils are sold. Under cash-flow accounting, the production costs of unsold pencils are deducted in the year of production, not in the year of sale. The addition to inventory is a form of saving and a full deduction is allowed for it from the base of a cash-flow, consumption-based tax.

Similarly, if the pencil manufacturer purchases a new machine to attach erasers that has a useful life longer than one year, under an income base only the value of the machine that is used up during that year is subtracted from the value of the pencil manufacturer's output. The

[79] Businesses would be treated as savings vehicles from the individual standpoint. Amounts invested in a business would be deductible under a cash-flow approach and not deductible under a tax prepayment approach. Returns paid from the business to the individual would be included in a cash-flow base and exempt from a tax prepayment base. Sole proprietorships might be difficult to handle in this manner, however, since the lines between the individual and the business may be unclear.

[80] Even if the taxpayer is allowed to use the cash receipts and disbursements method of accounting under the Code, the determination of depreciation still rests on a notion that accrual principles define the base.

[81] The business tax analogue of the tax prepayment approach to an individual consumption-based tax would result in no business-level tax.

remainder of the value of the machine is deducted in future years.[82] Under accrual accounting, the net income during each year of the machine's useful life is the value of the output it produces minus the decline in the value of the machine minus the value of other inputs used to produce the pencils. Under cash-flow accounting, by contrast, the taxpayer deducts the entire purchase price of the machine from the annual output of the business in the year the machine is purchased. The purchase of a durable good is a form of savings and a full deduction is allowed for it from the base of a cash-flow, consumption-based tax.

In general, consumption-based taxes allow the immediate deduction, or expensing, of the cost of capital purchases. Under an income base, however, businesses are allowed deductions each year for only an allocable portion of the cost of capital purchases. If the deduction allowed matches the decline in the value of the capital good, then the deduction corresponds to economic depreciation. To the extent that depreciation deductions allowed under present law exceed economic depreciation, the current corporate income tax moves in the direction of a consumption-based tax (*i.e.*, the present value of depreciation deductions approaches the expense associated with the capital good).[83]

To this point, the description of the cash-flow business tax has not specified what cash flows are considered. Two commonly discussed cash-flow bases in the economics literature are the real ("R") base and the real and financial ("R+F") bases.[84] The R base accounts only for cash flows based on real (non-financial) activity. Sales of goods and services are included in the base and purchases of inputs are subtracted from the base. Proceeds from a bank loan or a sale of stock are not included in the base and outflows such as loan repayments and payments of interest and dividends are not subtracted from the base. The R+F base accounts for cash flows based on both real activity and financial activity (except for transactions with equity holders). In addition to sales of goods and services, loan proceeds are included in the base. Purchases of inputs plus loan repayments and payments of interest are subtracted from the base. Stock sale proceeds and dividends are ignored.

The Hall-Rabushka flat tax and the X-tax use an R approach to defining the cash-flow base for businesses, which leads to a second distinction between them and the current income-

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[82] The amount of the machine that is used up in a given year is the decline in the value of the machine over the course of that year. Depreciation rules are generally used as a mean to reflect this decline in value over the life of an asset. For a discussion of depreciation rules, see Joint Committee on Taxation, *Background and Present Law Relating to Manufacturing Activities Within the United States* (JCX-61-12), July 17, 2012.

[83] For a discussion of the relationship between economic and tax depreciation, see *ibid.*

[84] Alan J. Auerbach, Michael P. Devereux, and Helen Simpson, "Taxing Corporate Income," in *Dimensions of Tax Design*, Stuart Adam, Timothy Besley, Richard Blundell, Stephen Bond, Robert Chote, Malcolm Gammie, Paul Johnson, Gareth Myles, and James Poterba (eds.), Institute for Fiscal Studies, Oxford University Press, 2010 pp. 837-893. The nomenclature for the different cash flow bases was introduced in Institute for Fiscal Studies, *The Structure and Reform of Direct Taxation: Report of a Committee Chaired by Professor J. E. Meade for the Institute of Fiscal Studies*, George Allen and Unwin, 1978.

based business tax.[85] That is the treatment of interest expense, which is deductible under the current income-based tax as a cost of producing income, but is not deductible under an R base. In contrast, under an R+F base, interest continues to be deductible and principal payments become deductible, while loan proceeds become includible in the base.

Under either cash-flow base, a consumption-based flat tax on business results in an expected tax collection of zero (in present value) on the returns to additional units of capital. In a competitive market, the price of each additional capital good is the expected present value of the output produced over the lifetime of the capital good. The business deducts that price in the year of purchase. If we assume that future returns from the capital good are equal to those required by the taxpayer at the time of purchase, then the returns the business receives from using each additional capital good increases its tax base in the future, but only by as much in present value as the amount expensed at the time of purchase. In other words, the tax savings from expensing investment on a particular capital good offsets, in present value, the tax liability on required return to that investment. Thus, similar to the treatment under the individual tax for deductible IRA contributions, the expensing of the cost of a capital good is equivalent to exempting from tax the required (or "normal") returns generated by such good. Any net collections (in present value terms) of the cash-flow tax arise from returns in excess of those required at the time of the purchase of an additional capital good or from inframarginal units of capital.[86]

[85] The deductibility of interest is not required in an income-based business tax. The Comprehensive Business Income Tax proposed by the Treasury Department was an income-based tax that would have denied businesses a deduction for interest. See Department of the Treasury, *Integration of the Individual and Corporate Tax Systems*, January 1992.

[86] Inframarginal units of capital are those for which the business expects a return in excess of the return that it could make on the next-best use of funds. For such units of capital, the present value of the expected returns exceeds the cost of the unit of capital. If the actual returns match the expected returns, there will be a positive present value of tax collected on those returns.

### C. General Criteria for Analysis of Tax Systems

#### 1. In general

Analysts generally judge tax systems in terms of how well the tax system answers four different questions.

- First, does the tax system promote or hinder economic efficiency. That is, to what extent does the tax system distort taxpayer behavior? Does the tax system create a bias against the domestic production of goods and services? To what extent does it promote economic growth?[87]
- Second, is the tax system fair? Does the tax system treat similarly situated individuals similarly? Does the tax system account for individuals' different capacities to bear the burden of taxation?[88]
- Third, is the tax system simple? Is it costly for taxpayers to determine their tax liability and file their taxes?[89]
- Fourth, can the tax system be easily administered by the government and can it induce compliance by all individuals? Is enforcement costly? Can some individuals successfully avoid their legal liabilities?[90]

The design of a tax system involves tradeoffs between these different goals. Measures designed to ensure compliance may increase the complexity of taxation for individual filers. Measures designed to promote simplicity may create distortions in investment decisions. Measures designed to promote growth may alter the distribution of the tax burden in a direction not desired.

#### 2. Efficiency

**<u>Overview</u>**

Any tax imposed on economic decisions, be it on the decision to work, the decision to save, or the decision to consume, creates non-neutralities and distorts taxpayer behavior. A tax system that taxes different individuals or different sources of income or consumption at different tax rates is not neutral between individuals or between sources of income, or types of consumption. Such non-neutralities can distort taxpayer behavior. For example, they may cause

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[87] For a discussion, see Joint Committee on Taxation, *Economic Growth and Tax Policy* (JCX-47-15), February 20, 2015.

[88] For a discussion, see Joint Committee on Taxation, *Fairness and Tax Policy* (JCX-48-15), February 27, 2015.

[89] For a discussion, see Joint Committee on Taxation, *Complexity in the Tax System* (JCX-49-15), March 6, 2015.

[90] *Ibid*.

taxpayers to make decisions that result in an inefficient use of their own and the economy's resources. Such distortions can reduce taxpayer welfare and diminish the performance of the economy. In general, the higher the marginal tax rates, the greater the reductions in taxpayer welfare and economic performance.[91] In addition, non-neutralities may induce taxpayers to engage in activities that, while they offer a positive private return, produce no net return to the economy. One way to characterize non-neutralities is to classify them as "intratemporal" (*i.e.*, non-neutralities that arise within the current year) or "intertemporal" (*i.e.*, non-neutralities that arise across different years).

Economists observe that income taxes are intertemporally non-neutral. By taxing both wage income and any return on after-tax wages saved, income taxes increase the cost of future consumption compared to present consumption. This may create a bias against saving. Aside from the distortion of consumer behavior, a bias against saving may inhibit economic growth because saving is necessary to finance investment in productivity-enhancing training, equipment, and research.

Some advocates of consumption taxation argue that consumption taxes enhance a country's ability to export goods and services. They argue that current U.S. taxes create a bias against exports. However, many economists argue that replacing the income tax with a consumption-based tax is unlikely to change U.S. demand for imports or increase the sale of domestically manufactured goods abroad.

**<u>Intratemporal non-neutrality</u>**

The present Federal income tax imposes different tax rates on different individuals. Taxing different individuals at different marginal tax rates creates opportunities for bracket arbitrage and clientele effects. For example, if a taxpayer's receipts and expenses may be realized with some discretion (as is the case with taxpayers using the cash receipts and disbursements method of account), it is advantageous to recognize income when his marginal tax rate is otherwise low and pay expenses when his marginal tax rate is otherwise high. Such bracket arbitrage is profitable for the taxpayer, but may require the use of his time or resources from which the economy as a whole receives no benefit. Also, the delay or acceleration of economic activity merely to affect a taxpayer's tax liability may create inefficiencies in the market. A single marginal tax rate, as in a Hall-Rabushka flat tax, generally reduces the potential for private profit from bracket arbitrage and may free the taxpayer's time and resources for other endeavors. The X-tax accomplishes a similar result by matching the tax rate on business cash flow with the top marginal tax rate on individual compensation. In addition, a VAT or retail sales tax eliminates bracket arbitrage, both by their single-rate structure and by virtue of not being levied directly on individuals. Under a tax system with increasing marginal tax rates on consumption, taxpayers can benefit from devoting effort to avoiding bunching large purchases in one year.

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[91] The efficiency cost of tax-induced distortions to economic behavior are referred to as "deadweight losses" or the "excess burdens" of taxation. See Alan J. Auerbach and James R. Hines Jr., "Taxation and Economic Efficiency," in Alan J. Auerbach and Martin Feldstein (eds.), *Handbook of Public Economics*, vol. 3, North-Holland Publishing Co., 2002.

Clientele effects represent a different sort of bracket arbitrage. With different taxpayers facing different tax rates, it may be advantageous for one group of taxpayers—a “clientele”—to hold one type of asset and another group of taxpayers to hold another type of asset. For example, because non-personal interest is deductible, it is cheaper for a high-tax bracket taxpayer to borrow than for a low-tax bracket taxpayer.[92] Thus, high-tax bracket taxpayers might be more likely to borrow, and to borrow from low- or zero-bracket taxpayers. This non-neutrality could distort credit markets by effectively charging different interest rates to different taxpayers, depending upon a factor that has nothing to do with the taxpayer’s creditworthiness. A number of empirical studies support the existence of clientele effects.[93]

Tax clienteles may also result in reduced tax collections. If reduced tax collections lead to higher overall tax rates, all existing non-neutralities may be magnified. Under present law, interest income is taxable and corporations may deduct interest expense. If all taxpayers faced the same tax rate, the aggregate tax collected from interest income recognized from corporate interest payments is offset by corporate interest deductions.[94] However, if taxpayers in tax rate brackets lower than that of corporations hold the debt, the government on net collects less in tax from interest income than it forgoes in interest deductions. Having only one marginal tax rate mitigates these clientele effects. However, to the extent that some taxpayers are tax-exempt, potential clientele effects may persist.

The Federal income tax also imposes different effective tax rates on different sources of income. For example, income from investments in corporate equity is generally subject to a corporate-level tax when earned and to individual-level tax when the income is distributed to individuals. Interest from certain State and local securities is exempt from tax. Such non-neutralities may distort investor decisions, thereby reducing the efficiency of the capital market in allocating capital to its most highly valued uses. A general aim of consumption-based taxes is to avoid such distortion of investment decisions by effectively exempting investment income from direct taxation.

Similarly, certain forms of employee compensation, such as employer-provided health benefits, are not taxed. Some economists suggest that the exclusion of certain health benefits from taxable employee compensation leads employees to consume more health care and less of other goods than they otherwise would.[95] Such non-neutralities can arise under consumption-

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92 The after-tax interest cost when the interest rate is $r$ is $r(1-t)$, where $t$ is the taxpayer’s marginal tax rate. The greater the value of $t$, the lower the after-tax interest cost.

93 James M. Poterba, “Taxation, Risk-Taking, and Household Portfolio Behavior,” in Alan J. Auerbach and Martin Feldstein (eds.), *Handbook of Public Economics*, vol. 3, North-Holland Publishing Co., 2002.

94 This discussion ignores certain other provisions of the income tax. For example, denial of net operating losses in excess of other income and the denial of a portion of the interest paid on certain high-yield debt obligations may limit the ability of a corporation to deduct interest expense in the current year.

95 For estimates of the impact of the tax exclusion for employer-sponsored health insurance on insurance spending by employees and employers, see Jonathan Gruber, “The Tax Exclusion for Employer-Sponsored Health Insurance,” *National Tax Journal*, vol. 64, no. 2, part 2, June 2011, pp. 511-530.

based taxes if certain goods or services are exempt from tax, or taxed at lower rates, than are other goods. For example, exclusion of health care services and health insurance from a consumption tax base may lead individuals to consume more of these services than they otherwise would. Taxpayers may also arrange their affairs to increase tax-preferred sources of income or consumption, leading to an erosion of the tax base. For example, employees might negotiate for a larger proportion of their income to be paid in the form of non-taxed fringe benefits. Erosion of the tax base could necessitate higher rates of tax, which could then exacerbate existing economic distortions. In addition to exclusion of particular sources of income or types of consumption, a consumption base may narrow if taxpayers can arrange their affairs to take advantage of general exemption amounts or lower rates of tax. Under certain consumption tax proposals, it can be advantageous, in a family context, to shift wages (Hall-Rabushka and X-tax) or consumption (cash-flow tax) to taxpayers who have not fully used their personal exemption or who are in a lower tax bracket.

A consumption-based tax may not necessarily eliminate all such distortions. As the preceding discussion suggests, distortions arise both from the breadth of the tax base and the rate of tax applied to different parts of the tax base. Providing one rate of tax does not eliminate distortions to the extent that some items remain outside the tax base, in which case the applicable tax rate is zero. As taxpayers' leisure time is always untaxed, higher tax rates under either an income-based or consumption-based tax could distort taxpayers' choice between work and leisure.

**Intertemporal non-neutrality**

One criticism of any income tax is that it is not neutral between present and future consumption. If a taxpayer earns wage income today and uses his wage income to consume today, the tax he pays relative to that consumption is equal to the tax on his wages. If the taxpayer earns wage income today and saves it to consume tomorrow, the tax he pays relative to that future consumptions equals the tax on his wage income plus the tax owed on any interest earned by his saving. The total tax is greater if the consumption is deferred.[96] The potential distortion in favor of present, rather than future, consumption may be important because it may give the taxpayer a disincentive to save, and saving is important for economic growth.

Investment and economic growth

When an economy's rate of net investment (gross investment less depreciation) increases, the economy's stock of capital increases. For a given amount of labor, a larger capital stock permits greater production of goods and services. If workers are more productive with a larger capital stock, that may lead to higher real wages and salaries. To the extent that this occurs, increases in investment may increase a nation's standard of living.

In the short run, increases in gross investment (investment in new capital as well as investment that is undertaken to replace depreciated or worn-out capital) increase the capital

[96] To be more precise, the present value of the tax paid is greater if some of the wage income is saved and the earnings from that saving subsequently are taxed as income.

stock. As the capital stock increases, worker productivity may increase, and to the extent that this occurs, the economy will experience a higher rate of growth. The result is a higher level of per capita income. Because a larger capital stock results in a larger amount of depreciation, in the long run any given rate of investment just offsets the depreciation of the steady-state capital stock. Thus, in the long run an increase in the level of investment may increase a nation's standard of living, but may not increase a country's long-run rate of growth. To sustain a higher growth rate, investment may need continue to increase as a percentage of GDP, although improvements in technology may offset the need for capital investment to grow.[97]

Sources of investment funds

Investment involves a tradeoff between consumption today and consumption tomorrow. Investment can either be financed by national saving or by foreign borrowing (saving by foreigners). A basic accounting identity of the national income and product accounts states that national investment must equal the sum of private saving, government saving, and net foreign borrowing.

If capital is not perfectly mobile between nations, then the level of domestic investment is determined in large part by the level of domestic saving. A low domestic saving rate may be associated with a low domestic investment rate. However, there has been a strong positive correlation between a country's rate of investment and its rate of saving, so that countries with high saving rates generally have high rates of investment as well.[98] Therefore, the level of national savings may be an important determinant of the level of national investment.

Effect of tax policy on saving

Economists disagree whether, in fact, an income tax does discourage saving. At issue is the extent to which taxpayers' savings responds to changes in the net, after-tax return to their saving. Empirical investigation of the responsiveness of personal saving to the general taxation of investment earnings provide no conclusive results; some studies find that personal saving responds strongly to increases in the net return to saving, while others find little or a negative response.[99] The literature on the effect of tax incentives for retirement savings under an income tax system has yielded stronger results. One large study on the savings decisions of the Danish

[97] A qualification exists to the previous analysis. It is possible that a higher investment level can lead to a higher growth rate even in the long run. Even if there is no growth in the level of investment, the investment to replace depreciated capital may still enhance economic growth because the new capital is more productive than the capital it replaced. The higher the level of investment, the more new capital is purchased each year, and thus the higher rate at which new technologies may be adopted.

[98] One of the first papers documenting this result is Martin Feldstein and Charles Horioka, "Domestic Saving and International Capital Flows," *Economic Journal*, vol. 90, no. 358, June 1980 pp. 314-329. A critique of this paper and a survey of subsequent analysis on the relationship between savings and investment can be found in Maurice Obstfeld and Alan M. Taylor, *Global Capital Markets: Integration, Crisis, and Growth*, Cambridge University Press, 2004, pp. 61-80.

[99] B. Douglas Bernheim, "Taxation and Saving," in Alan J. Auerbach and Martin Feldstein (eds.), *Handbook of Public Economics*, vol. 3, North-Holland Publishing Co., 2002.

population from 1995 to 2009 finds that, on average, individual savings respond little to changes in the net, after-tax return to savings, and that non-tax mechanisms, such as automatic employer contributions to retirement accounts, have a substantially larger impact on retirement savings than tax incentives.[100]

**Effect of a VAT on international trade**

Overview

Because border tax adjustments provide rebates on exported goods and impose taxes on imported goods, destination-based VATs may appear on the surface to provide subsidies for exports and disincentives to imports. In contrast, an origin-based consumption tax appears to penalize exports relative to imports. In fact, however, border tax adjustments provide neither incentives nor penalties for international trade. Similarly, it is sometimes argued that the U.S. corporate income tax places U.S.-based corporations at a disadvantage when selling overseas and creates an advantage for foreign-based corporations that sell in the United States, and that replacing the corporate income tax with a VAT or retail sales tax would encourage exports and discourage the purchase of imports. Economists generally argue that this outcome is unlikely.[101]

A potential benefit of a consumption-based tax on international trade is the possibility that replacing the income tax with a consumption-based tax will increase savings by reducing the penalties on saving imposed by the income tax. The possible effect of consumption taxes on savings are discussed above. An increase in domestic saving may increase domestic capital formation and productivity, making U.S. products less expensive abroad. However, an increase in demand for U.S. products generally leads to an appreciation of the dollar, eliminating some or all of the price advantage.

Destination-based consumption taxes

A consumption tax based on the destination principle imposes tax on imports and provides tax rebates on exports. These import fees and export rebates are commonly referred to as border tax adjustments and are a fixture of most VAT systems currently in place. Such adjustments generally apply under a retail sales tax. They are also fully consistent with WTO rules as long as they do not discriminate against imports or provide over-rebates on exports. Because the tax on imports has the appearance of a protective tariff, and the rebate on exports has the appearance of an export subsidy, it is commonly believed that a consumption tax based on the destination principle would help the U.S. balance of trade. However, economists have

[100] Raj Chetty, John N. Friedman, Soren Let-Petersen, Torben Heien Nielsen, and Tore Olsen, "Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark," *The Quarterly Journal of Economics*, vol. 129, no. 3, August 2014, pp. 1141-1219.

[101] The ability to adjust taxes at the border may make a difference in the case when intermediate goods are traded. A retail sales tax that does not provide an adjustment at the border is equivalent to a tariff on the import of intermediate goods (or a subsidy to the production of intermediate goods for export). Gene M. Grossman, "Border Tax Adjustments: Do They Distort Trade?" *Journal of International Economics*, vol. 10, no. 1, February 1980, pp. 117-128.

long held that there is no direct effect of a consumption tax on the volume of exports or imports.[102] In fact, the imposition of a tax on imports—equal to that imposed on goods produced domestically—and a similar tax rebate on exports is intended to maintain a level playing field between domestic and foreign producers in their competition for business in both domestic and foreign markets.

To help understand why border tax adjustments do not distort or subsidize international trade, consider the following example. Suppose a certain good produced both overseas and domestically, such as wheat, sells at $4 per bushel. With the enactment of a broad-based U.S. VAT at a rate of 10 percent, the price of wheat in the U.S. would increase by 10 percent to $4.40 (under the assumption that the tax is passed forward to consumers) per bushel of wheat produced domestically as well as overseas since both are subject to the tax—the domestically produced wheat being subject to the normal VAT and the wheat produced overseas subject to the import tax at the same rate as the VAT. Thus, even though imports are subject to tax, U.S. buyers' choice between imported and domestically produced wheat is not altered.

Likewise, foreign consumers' choice between goods produced in the U.S. and goods produced in their own country is not altered even though U.S. produced goods are provided VAT rebates when exported. Wheat produced outside of the United States and sold to foreign consumers remains at its world price of $4 per bushel and wheat produced inside the United States remains at $4 per bushel since no U.S. VAT is imposed on the exported wheat.

Origin-based consumption taxes

From the preceding discussion, it might seem that a consumption tax without border tax adjustments (an origin-principle consumption tax) such as the Hall-Rabushka flat tax could disadvantage domestic producers relative to foreign producers in overseas markets. However, border tax adjustments may not be the only mechanism operating to maintain neutrality. Other self-executing adjustments by the markets, such as reductions in wage rates or in the value of the domestic currency, could wholly offset any potentially detrimental trade effects of origin-based taxation of exported goods.

Continuing the above example, if the world price of wheat is $4 per bushel, the burden of the tax cannot be shifted forward to consumers in the form of higher prices. If the markets are competitive, the seller cannot both reduce his price and remain in business. However, labor may bear the burden of the tax through reduced wages. This allows the seller to remain in business with a price of $4 per bushel of wheat. Therefore, there is no effect on foreign trade. Alternatively, the domestic currency may depreciate so that although the nominal price has

[102] See, for example, Martin Feldstein and Paul Krugman, "International Trade Effects of Value-Added Taxation," in Assaf Razin and Joel Slemrod (eds.), *Taxation in the Global Economy*, University of Chicago Press, 1990, pp. 263-278; and Alan Viard, "Border Tax Adjustments Won't Stimulate Exports," *Tax Notes*, March 2, 2009, pp. 1139-1143.

increased to $4.40, the price paid for domestic wheat by foreign consumers in their currency is unchanged from its before-tax level.[103]

Replacing the corporate income tax with a consumption-based tax

It is sometimes argued that replacing the income tax with a VAT, a retail sales tax, or other consumption tax might boost the competitiveness of U.S. firms relative to imports or foreign-owned U.S. firms. In the case of imports, it might be argued that foreign firms enjoy access to U.S. markets but bear no U.S. tax because, under the source principle, no U.S. income tax is imposed on imported goods. In the case of goods produced by foreign-owned U.S. firms importing near-finished goods from the foreign parent company, only a small amount of total income properly allocable to the sale of that product is subject to U.S. corporate income tax.[104]

Because of economic adjustments, either through changes in the price of taxed goods or through changes in the exchange rate, the above line of reasoning is generally incorrect. It is often assumed that consumption taxes are passed along to consumers in the form of higher price, and it is often assumed that corporate income taxes are borne by owners of capital.[105] Under these (not necessarily innocuous) assumptions, conclusions concerning the competitive effects of a VAT do not hold. Although domestic and foreign producers may be subject to different corporate tax burdens, none of this is reflected in higher prices, and the relative attractiveness of goods produced by U.S.- and foreign-owned firms is not affected. On the other hand, consumption taxes may raise prices uniformly for the goods of both domestic- and foreign-owned firms, but the relative attractiveness of their goods may be unaffected. Therefore, under these assumptions, a consumption tax, as compared to a corporate income tax, does not directly improve the U.S. balance of trade by raising the price of goods produced by foreign-owned firms.

Even if the burden of the corporate income tax is not borne completely by the owners of capital, the effects of the corporate income tax on international trade may be minimal. If the corporate tax increases prices instead of reducing profits, under a system of flexible exchange rates, an offsetting adjustment in the exchange rate is likely to occur and eliminate any disadvantage to exports from increased prices.

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[103] *Ibid.*

[104] In addition, possible problems in the administration of related-party transfer pricing rules may further reduce the amount of U.S. tax imposed on foreign-owned U.S. corporations. For a discussion of these issues, see Joint Committee on Taxation, *Present Law and Background Related to Possible Income Shifting and Transfer Pricing* (JCX-37-10), July 20, 2010.

[105] The burden of consumption taxes is widely assumed to be passed along to consumers. However, this assumption is not beyond reasonable dispute. See the discussion in Part IV.C.3 and Part IV.D.1 below. There is also disagreement about the incidence of the corporate income tax. See the discussion in Joint Committee on Taxation, *Modeling the Distribution of Taxes on Business Income* (JCX-14-13), October 16, 2013.

## 3. Tax equity

### Standards of comparison

Discussion of the fairness of a tax cannot take place without a standard by which fairness can be judged. While most analysts rely on the notion of "ability to pay" or the taxpayer's capacity to bear taxes, there is no agreement regarding the appropriate standard by which to assess a taxpayer's ability to pay.

#### Annual income

Many analysts have long advocated a comprehensive measure of income as a measure of ability to pay.[106] Although income is commonly measured on an annual basis, it is recognized that there are significant shortcomings with using annual income as an indicator of ability to pay. First of all, an individual may be subject to wide swings in income from year to year. In this case, a snapshot of income in any one year may be a misleading indicator of ability to pay. An individual's income generally varies more from year to year than does that individual's consumption expenditures, as individuals save money for "a rainy day" when their income is high and dissave to finance consumption purchases when income is low; the Federal tax and transfer systems may also blunt some of the volatility in consumption when income is high or low. Second, over the course of a lifetime, annual income will vary according to age, where income is low during school years, peaking toward the end of one's working years, and declining in retirement. Low annual income may incorrectly indicate a low ability-to-pay for college students or retirees, and probably should not be considered equal to the ability-to-pay at the peak of one's career. This observation has led some economists to suggest that income taxes be age dependent.[107]

#### Lifetime income

Accordingly, many economists have argued that lifetime income (or some average of income over several years) is a better indicator of ability-to-pay.[108]

Over an individual's lifetime, consumption is roughly equal to income,[109] but as noted above, consumption is likely to be high relative to income in low-earning years and low relative

[106] See, for example, Henry Simons, *Personal Income Taxation*, University of Chicago Press, 1938; and Richard Goode, "The Superiority of the Income Tax," in Joseph Pechman (ed.) *What Should Be Taxed: Income or Consumption*, Brookings Institution, 1980.

[107] For a discussion of age-dependent taxes, See James Banks and Peter Diamond, "The Base for Direct Taxation," in *Dimensions of Tax Design*, Stuart Adam, Timothy Besley, Richard Blundell, Stephen Bond, Robert Chote, Malcolm Gammie, Paul Johnson, Gareth Myles, and James Poterba (eds.), Institute for Fiscal Studies, Oxford University Press, 2010 pp. 548-674.

[108] If individuals do not have easy access to well-developed financial markets, the appropriateness of lifetime income as a measure of ability-to-pay should be qualified. For example, if an individual is credit-constrained, lifetime income may overestimate a low-income individual's ability to pay.

to income in high-earning years. Therefore, if consumption tax liabilities are borne in proportion to consumption, a broad-based consumption tax appears regressive if compared to an annual measure of income and appears less regressive and perhaps even proportional when lifetime income is used as the measure of ability-to-pay.

It has been widely observed that annual consumption is much less variable than annual income, and that annual consumption is more likely to be a function of lifetime income than annual income.[110] Based on this observation, some have advocated that annual consumption should be used as a measure of ability to pay since it is a good proxy for lifetime income.[111] Others have advocated for using a consumption as a measure not because it is a good proxy for income, but because it is a better measure of economic well-being than income. If a tax system is considered fair when two individuals with the same wealth at the beginning of their lives and the same abilities to earn wage income are taxed equally, then consumption is a better tax base than income. This is the case because (if an individual neither receives nor leaves bequests) the present value of lifetime consumption equals the present value of his lifetime earnings, while the present value of lifetime income varies with the timing of savings. The present value of a consumption tax is then proportional to economic well-being but the present value of an income tax varies for individuals with equal measures of economic well-being and, in fact, may increase with the rate of savings.

**Equal treatment of equals**

The present income tax may effectively impose different total tax liabilities on taxpayer who otherwise have the same economic income if they have different sources of income or types of expenses. In addition to whatever economic distortions these non-neutralities might create, some view this outcome as unfair. One rationale for a single-rate consumption tax is that it applies the same rate of tax to all similarly situated individuals. However, it is sometimes difficult to determine when two individuals are similarly situated. For example, people may disagree over whether two taxpayers are similarly situated if they have the same income but different medical expenses or different work-related expenses, or whether they rent or own their home. These are disagreements about the tax base. Any noncomprehensive tax base, whether under an income-based or consumption-based tax, potentially imposes different tax liabilities on any two taxpayers who some might consider to be similarly situated. So too, a comprehensive tax base might impose different tax liabilities on any two taxpayers who some might consider to

[109] Lifetime income may exceed lifetime consumption (in present value) when an individual receives large bequests or gifts (and these receipts are not considered income). Lifetime income may be less than lifetime consumption (in present value) when an individual makes bequests or gifts (and these payments are not considered consumption).

[110] For empirical support of this observation, see Costas Meghir and Luigi Pistaferri, “Earnings, Consumption, and Life Cycle Choices,” in Orley Ashenfelter and David Card (eds.), *Handbook of Labor Economics*, North-Holland Publishing Co., 2011.

[111] James M. Poterba, “Is the Gasoline Tax Regressive?” in David Bradford (ed.), *Tax Policy and the Economy*, vol. 5, MIT Press, 1991.

be similarly situated if, for example, one believes that medical expenses are associated with medical issues that reduce the taxpayer's ability to pay.

**Progressivity**

When discussing tax rates, analysts distinguish average tax rates from marginal tax rates. An average income tax rate is the taxpayer's total income tax liability divided by his total income. A marginal income tax rate is the rate of tax imposed on an additional, or marginal, dollar of income earned by the taxpayer. Statutory tax rates in the Code are marginal tax rates. A tax is progressive if the average tax rate rises as the tax base rises. The present Federal individual income tax is a progressive tax. The X-tax and Hall-Rabushka flat tax are also progressive because they exempt some initial level of compensation from taxation; the X-tax also promotes progressivity by taxing compensation under a graduated rate structure. Similarly, a single- or multi-rate consumption tax can be progressive if it exempts an initial level of consumption. If a tax exempts an initial level of income or consumption from taxation, it does not require increasing marginal tax rates in order to be progressive.[112] For example, if a flat income tax exempted the first $20,000 of income from tax and imposed a marginal tax rate of 20 percent on all income over $20,000, the average tax rate rises from zero at an income of $20,000; to 6.7 percent at an income of $30,000; to 14.7 percent at an income of $75,000; and to 19.6 percent at an income of $1 million.[113]

In the case of point-of-sale consumption taxes such as the VAT and retail sales tax, an individual-level exemption for a certain amount of consumption may be difficult to administer, making it more difficult to achieve progressivity under a consumption tax than under an income tax. Under these taxes, an individual's consumption may be difficult for the government to measure because there is no annual reconciliation similar to that which occurs under the current income tax system. Individuals may make purchases at a variety of establishments, none of which may be required by the government to trace expenditures back to the consumer, and the government may have insufficient, timely data on individual income, saving, and dissaving to accurately measure annual consumption from information on income and savings data. Policymakers may instead choose to reduce tax burdens on taxpayers with low ability to pay by exempting basic items such as food and clothing from taxation, but such a policy may be a costly method of achieving progressivity since both high- and low-ability taxpayers consume those items. In addition to creating non-neutral taxation of different consumption goods, any increase in revenue required to offset the loss in revenue from exempting certain goods and services may necessitate higher rates of tax that may exacerbate existing tax-induced economic distortions. In contrast to point-of-sale consumption taxes, the Hall-Rabushka flat tax and the X-tax have some

[112] Mathematically, if the marginal tax rate is greater than the average tax rate, the average tax rate increases as income increases. A tax that exempts an initial level of income or consumption commences with an average tax rate of zero. Hence, any positive marginal tax rate will cause the average tax to increase as income increases beyond the exemption level.

[113] In general, the average tax rate under the hypothetical flat income tax described in the text is zero for incomes (denoted by $Y$) of $20,000 or less and $[(0.2)(Y - \$20{,}000)]/Y$ for incomes in excess of $20,000. The average tax rate always increases as income ($Y$) increases.

form of annual reconciliation (for purposes of computing business cash flow and individual compensation) that enables these systems to promote progressivity more easily.

**Economic incidence of consumption-based taxation**

Simple calculations of taxes paid may not show who truly benefits or who is harmed by fundamental tax restructuring. The burden of taxation is not well represented by a tabulation of who pays the tax. For example, the statutory incidence of Federal alcoholic beverage excise taxes is on the producers of such beverages, but most analysts believe that consumers bear the burden of such taxes in the form of higher prices for alcoholic beverages. Assigning the collection of a new tax at the corporate level or at the individual level in a way to approximate the tax remitted by individuals and corporations under present law does not mean that the tax burden has been distributed across taxpayers in the same manner as present law.

To determine the incidence of any tax, it is necessary to determine which individuals bear the burden of the tax and how this burden changes over time. A consumption tax can lead to increases in the general price level in the economy or to reductions in nominal wages and profit rates. For wage earners, the distinction is unimportant, because they face the same reduction in buying power whether their nominal wage falls or the prices they face increase. In either case, their real wage falls. However, the distinction is important for individuals who receive some or all of their income fixed in nominal dollars (*e.g.*, government transfer payments or interest receipts). For example, individuals whose income consists only of non-indexed government transfers are burdened if prices rise, but not if wages fall. Whether a consumption tax leads to nominal wage and profit declines or to price increases may also depend on the monetary policy of the Federal Reserve, and cannot be predicted on the basis of economic theory. Part IV.D.1, below, discusses further the economic effects that may occur if prices change or if wages change.

### 4. Simplicity, administration, and compliance

One common concern about the current income tax system is its complexity. The complexity leads to the use of resources in order to learn the rules of the tax and to prepare returns for the Federal government's collection of the tax. A purported benefit of replacing the current income tax with a consumption tax is that the latter is simpler and requires fewer resources to collect the same amount of revenue.

Individuals, businesses, and the government all use time and other resources in the process of collecting tax revenue. A total of 145,183,500 Federal tax returns are expected to be filed in calendar year 2016, of which 80.7 percent are e-filed and 19.3 percent are on paper.[114] The IRS has produced, for the 2016 filing season, estimates of taxpayer burdens associated with filing certain tax forms. The average time spent filing the main individual income tax forms—Form 1040, 1040A, and 1040EZ (including all attachments)—is estimated to be 13 hours per taxpayer, with an average cost of $200 per taxpayer;[115] the average cost includes the cost of tax

[114] Joint Committee on Taxation, *Complexity in the Federal Tax System* (JCX-49-15), March 6, 2015.

[115] Internal Revenue Service, Instructions for Form 1040, 2015, p. 98.

return preparation and submission fees and tax preparation software costs. The average burden for businesses filing these forms is 22 hours, with an average cost of $410, while the average burden for non-businesses filing these forms is eight hours, at an average cost of $110.

The IRS has also produced estimates of taxpayer burden for partnerships and corporations. The average time spent filing the main partnership tax forms—Forms 1065, 1065-B, and 1066 (including all attachments)—is 290 hours per taxpayer, with an average cost of $5,600 per taxpayer.[116] Large partnerships—defined as having end-of-year assets greater than $10 million—face an average time burden of 605 hours and an average cost of $29,000.[117] The average time spent filing the main corporate tax forms for taxable corporations—including Form 1120 and related forms (including all attachments)—is 305 hours per taxpayer, with an average cost of $5,800 per taxpayer. Large taxable corporations—defined as having end-of-year assets greater than $10 million—face an average time burden of 1,245 hours and an average cost of $68,900.[118] The average time spent filing the main tax forms for entities taxed as pass-through corporations—Form 1120-REIT, 1120-RIC, 1120-S (including all attachments)—is 245 hours per taxpayer, with an average cost of $3,500 per taxpayer.[119] Large pass-through corporations—defined as having end-of-year assets greater than $10 million—face an average time burden of 605 hour and an average cost of $30,800.[120]

One potential appeal of a consumption tax is that taxpayers would not need to file these individual and corporate income tax returns, thereby reducing compliance and administrative costs. The countries that have adopted a VAT have generally maintained an income tax system, but examining other countries' experience with the VAT may shed light on potential compliance costs and benefits of a VAT. A 2008 report by the Government Accountability Office ("GAO") reviewed VATs in Australia, Canada, France, New Zealand, and the United Kingdom, and found that available data indicated that a VAT may be less expensive, and easier to administer, than an income tax.[121] However, taxpayers are still required to file forms and keep records, such as credit invoices, to comply with the VAT, and VATs with multiple rates may be more difficult to

[116] Internal Revenue Service, Instructions for Form 1120, 2015, p. 22

[117] *Ibid.* Of the total 3.6 million taxpayers that the IRS estimates will file these tax year 2015 partnership tax forms, 0.2 million are classified as large.

[118] *Ibid.* Of the total 2.1 million taxpayers that the IRS estimates will file these tax year 2015 forms for taxable corporations, 0.1 million are classified as large.

[119] *Ibid.*

[120] *Ibid.* Of the total 4.5 million taxpayers that the IRS estimates will file these tax year 2015 tax forms for entities taxed as pass-through corporations, 0.1 million are classified as large.

[121] U.S. Government Accountability Office, *Value-Added Taxes: Lessons Learned from Other Countries on Compliance Risks, Administrative Costs, Compliance Burden, and Transition*, GAO-08-566, April 4, 2008; and U.S. Government Accountability Office, *Value-Added Taxes: Potential Lessons for the United States from Other Countries' Experiences*, GAO-11-867T, July 2011.

calculate and comply with than single-rate VATs.[122] Exempting businesses of a certain size from the VAT may reduce administrative costs, since these businesses need not register for the tax, but will likely reduce the amount of revenue collected from the VAT. A few studies described by GAO find that compliance burden as a percentage of annual sales in Canada, New Zealand, and the United Kingdom range from approximately two percent for businesses with less than $50,000 in annual sales to 0.04 percent for businesses with over $1,000,000 in sales, which may suggest that a large portion of the compliance cost of a VAT may be fixed in nature (*i.e.*, does not vary with sales or other economic activity).[123] Transition to a VAT may present administrative difficulties. Certain countries that had newly implemented a VAT at the time of the study—Australia, Canada, and New Zealand—spent 15-24 months to implement their VATs, with a large portion of time devoted to education activities. However, these transition costs are largely one-time, and they may be small relative to the reduction in the administrative and compliance costs of a VAT over time.

One of the reasons for the complexity and costs of the current system is the attempt to relate tax liability to the taxpayer's ability to pay. Because income is used as the yardstick for ability to pay, income needs to be measured properly, which can be particularly difficult in the case of certain capital income. One element of simplicity provided by a consumption-based tax system is that capital income need not be measured. Another reason for the complexity of the current system is the existence of special incentives for particular activities. These special treatments involve exceptions from the general rules in order to encourage behavior that is deemed worthwhile. A cost of these incentives is that taxpayers must familiarize themselves with the relevant rules and, especially in the case of individual taxpayers, may need to keep records that they would not otherwise keep. To the extent that a consumption tax could be instituted on a comprehensive base, this kind of complexity could be reduced. If there are numerous exceptions provided, whether for efficiency or equity reasons, the consumption tax may be made more complex.

For individual consumption taxes, nonbusiness taxpayers are stilled required to file returns. Under the tax prepayment approach, the determination of the base may be simpler, since capital income is ignored. One needs to make distinctions between wage and non-wage income so that only the former is included in the base. Under a cash-flow approach that includes financial transactions, taxpayers do not need to determine income from capital assets, merely the proceeds from their sales. But borrowing and lending transactions may need to be reported to a greater extent than under present law. In a pure cash-flow approach, the total amounts need to be reported: borrowings (which are includible by the borrower) and repayments (which are deductible by the borrower). If special provisions are provided to exempt some borrowing, the system increases in complexity.

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[122] *Ibid*. An earlier 1993 study by the Government Accountability Office estimates that multiple rates could increase the administrative cost of audits by 30 to 50 percent. See U.S. Government Accountability Office, *Value-Added Taxes: Administrative Costs Vary with Complexity and Number of Businesses*, GAO/GGD-93-78, May 1993.

[123] *Ibid.*

Replacement of the current income tax with a retail sales tax or a VAT removes the filing requirement from non-business taxpayers. Depending on the level of exemption for small business, these VATs require all businesses to file separate returns. For corporations and partnerships, this requirement may be little change from the present, but for sole proprietors, there may no longer be a form (Schedule C) that is attached to the individual return. Rather, they may file a new, different form that may or may not resemble the current Schedule C.

It is often argued that one advantage of the credit-invoice method is that compliance and enforcement is enhanced because invoices are available for audit purposes. However, this enforcement mechanism is useful only if there is a credible threat of audits. More importantly, the credit-invoice method possesses a degree of self-enforcement because the incentive for sellers to underreport sales to reduce tax liability may be checked by the incentive of purchasers to have such sales reported at their full price in order to receive full VAT credits. However, at the retail level, there is no similar check on the seller's incentive to underreport sales because final consumers do not receive VAT credits. In the case of exports, particular attention has been devoted in the European Union to problems associated with abuse in the refunding of VAT to exporters through a series of artificial transactions, which is due in part to the zero-rating of exports.[124]

Proponents of the subtraction method claim that because the method may rely upon records the taxpayer maintains for other purposes, the subtraction method could be implemented soon after enactment without adding new administrative recordkeeping burdens for the government or taxpayers. This argument may lead one to believe that value added under the subtraction method may be determined by making relatively simple adjustments to existing income tax returns or financial statements. In reality, this is only the case where the taxable base is designed to match existing taxpayer records. Because existing records usually aggregate different types of inputs and outputs, the use of these records may not always result in an accurate measure of value added. For example, the formula for value added is often thought of as sales less cost of goods sold. Both sales and cost of goods sold may be found on income tax returns and on financial statements. However, for both book and income tax purposes, sales includes both domestic taxable sales and non-taxable export sales. Similarly, the cost of goods sold account may represent purchases of raw materials that are deductible for VAT purposes as well as internal costs such as wages that are not deductible for VAT purposes. Thus, a more accurate measure of value added requires the examination of more basic accounting information such as sales and purchase registers and invoices. In this respect, the subtraction method resembles the credit-invoice method.

As a practical matter, the audit of the VAT compliance of a large business is likely to be substantially similar under either the credit-invoice or subtraction method. Under the credit-invoice method, the government agency administering the VAT is unlikely to individually examine the thousands of sales and purchase invoices of a large business to determine if the

[124] Michael Keen, and Stephen Smith, "VAT Fraud and Evasion: What Do We Know and What Can Be Done?" *National Tax Journal*, vol. 59, no. 4, December 2006, pp. 861-887. This paper has a more general discussion of opportunities for fraud and evasion under both a VAT and a retail sales tax.

proper VAT amount is remitted to the government. Rather, the agency is likely to compare the business's VAT remittances to its overall sales and purchases for purposes of reasonableness and may spot-check various invoices to determine if the proper records and internal controls are maintained.

It is sometimes claimed that a retail sales tax or a VAT aids in collecting taxes from the activities of the underground economy—the subset of the economy that largely carries on transactions in cash and avoids detection—since even individuals who engage in criminal activity purchase goods and services from the legitimate sector of the economy. For goods that are purchased by individuals using cash from illicit activities, a retail sales tax or VAT could collect tax on the portion of value added prior to retail (where the transaction may be still done off the books). The opportunity to pick up extra revenue from these sources depends on how much revenue is currently being collected under present law from workers and shareholders of the firm producing the good that is sold to the person using cash from illicit activities. Another component of the underground economy is the non-criminal provision of goods and services by individuals who take cash payments and do not report the receipts. Those services may still escape a retails sales tax or VAT, since the service provider could continue to take cash and not report the receipt. In this case, no tax is collected on the value added by the service provider, which is similar to the situation under present law, where no tax is collected on the income of the service provider.

## D. Transition Issues

The introduction of a consumption tax may affect the prices of existing assets, the overall level of prices, and the level of interest rates. Those changes could lead to windfall losses and benefits, depending on the taxpayer, that policymakers may want to take into account as part of a transition to a consumption tax.

### 1. Economic issues

**Changes in asset prices**

To understand the possible effects of a transition from the current income tax to a consumption tax, it is instructive to consider separately the introduction of the consumption tax and the elimination of the current tax.

Part IV.A demonstrates that a consumption tax is equivalent to a tax on wages plus a tax on capital existing at the time of the tax's introduction. This one-time capital tax may change the price of existing assets. In the absence of specific transition rules, the introduction of a consumption tax may result in increased tax liability on the returns to existing assets. Consider as an example a piece of machinery owned by a business at the time a consumption tax is imposed. Once the consumption tax is in place, the proceeds from sales of the output of the machine are included in the tax base. The business can deduct the cost of raw materials and labor purchased after the date on which the consumption tax is introduced, but it cannot take a deduction for the use of the machine, since the machine was purchased prior to the introduction of the consumption tax. The consumption tax causes the after-tax return of the machine, and hence the value of the machine, to fall. The business cannot avoid this loss in wealth by disposing of the machine. A prospective buyer of the machine may be willing to pay a price for the machine equal to its market value prior to the consumption tax (because the prospective buyer is able to take a full deduction for the cost of the machine). But the sales price of the machine is included in the tax base of the business that sells the machine, giving rise to a tax liability. The net proceeds the business can get from selling the machine are no more than the after-tax return it receives from keeping the machine and selling the output it produces. In either case, the business suffers a loss in value on the machine it owns at the time the consumption tax is introduced. The higher the rate of the consumption tax, the larger the potential decline in the value of existing capital.

If the consumption tax replaces the income tax, the decline in the value of existing capital may be tempered. The elimination of the income tax may have no effect on the value of existing capital if the basis of the existing assets equals their market value. Again, consider a machine in place at the time the income tax is eliminated. If the unamortized basis of the machine equals its market value, then the reduction in the tax liability on output produced by the machine just matches the loss in the value of depreciation deductions over the remaining life of the machine. If the business had been able to take advantage of accelerated depreciation (relative to economic depreciation) on the machine before the income tax was repealed, then the basis of the machine would have been less than its market value. In such a case, the elimination of the income tax increases the value of the existing capital, since the reduction in the tax liability on the output exceeds the loss in the value of depreciation deductions. The net effect of the replacement of the current income tax by a consumption tax is that the decline in the value of existing business assets depends on the basis of the assets. For businesses holding assets of equal market value at the time of the replacement of the current income tax by a consumption tax, the decline in value is greater for those holding assets with larger basis.

The substitution of a consumption tax for the present income tax may have effects on asset prices in addition to those caused by the treatment of unamortized basis of business assets. The income tax contains numerous provisions that provide preferential treatment to certain business assets. The result of these provisions is to cause the spread between the before-tax and after-tax returns to vary across assets, with smaller spreads for assets with tax-preferred treatment.[125] Since a consumption tax regime tends to equalize the tax treatment across different assets, the relative prices of these assets may change. Specialized or immobile assets in sectors losing their relatively favorable tax treatment may be expected to experience price declines. In particular, owner-occupied housing could experience price declines since the consumption of owner-occupied housing services loses its current tax-favored treatment under many consumption tax plans.[126]

**<u>Changes in price level</u>**

While the imposition of a consumption tax could lead to a fall in the value of existing assets, the distribution of that loss across equity and debt holders depends on what happens to the price level.

<u>Determinants of changes in the price level</u>

Because a broad-based VAT is commonly believed to increase prices by the amount of tax, it is generally expected that under certain conditions a VAT may increase the price level. The degree by which it raises the price level depends on the rate of tax and the comprehensiveness of the base. In general, any increase is less than the rate of tax. For example, if a 10-percent VAT is levied in an economy where consumption is 70 percent of output (because, typically, investment goods are excluded from a consumption-based VAT, and government as well as certain other consumption goods are zero-rated), the most the price level may be expected to increase is seven percent. The increase is determined in large part by macroeconomic policy, especially monetary policy. If the Federal Reserve does not accommodate the upward pressure on prices from the tax by increasing the supply of money, the overall price level is not expected to increase (although the price of taxed goods relative to zero-rated goods still increases). Finally, it is also important to note that since the VAT only raises the price level when it is imposed, any increase in the price level is likely to be a one-time event.

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[125] For estimates of estimates of effective marginal tax rates on the returns to investment, by asset type and taxpayer characteristics, see Congressional Budget Office, *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options*, December 18, 2014.

[126] Housing services may be taxed, in advance, at the time of the purchase of a house under a credit-invoice or subtraction-method VAT. Under an individual consumption tax of the tax prepayment type, such as the flat tax, houses are purchased with after-tax dollars and owner-occupied housing services (the returns of that housing purchase) are untaxed, the same treatment accorded financial assets such as stocks, bonds, and savings accounts.

Since nominal price levels are determined in part by the independent actions of the Federal Reserve, they cannot generally be predicted in advance. For example, while it is usually assumed that a consumption tax increases the prices of taxed goods, it also is conventional to expect that a wage tax reduces nominal after-tax wages, and a tax on existing capital reduces its value. These assumptions are valid only if the Federal Reserve reacts differently to economically equivalent tax changes.

Effects of changes in the price level

Increase in price level

If prices rise, the value of all income falls, unless the income is specifically indexed to changes in the price level. For example, an individual living entirely on an indexed Social Security pension is not affected by a uniform price increase.[127] Similarly, an individual receiving Medicare services is partially protected against the price rise, because the in-kind transfer of health care is effectively indexed.[128] In contrast, recipients of unindexed private pensions experience a decline in purchasing power when prices rise.

If the price increase is not anticipated (for example, through an increase in nominal interest rates so that the real value of the money repaid to the lender is unchanged), then borrowers benefit at the expense of lenders because they are able to repay obligations with cheaper dollars. The losses imposed by the consumption tax's one-time levy on existing wealth, which results a decline in the value of capital income from both financial and physical assets, is shared by equity and debt holders.

No increase in price level

If, on the other hand, prices do not increase, only certain types of income are affected. Recipients of fixed nominal transfers are not hurt by the tax. Such transfer payments include both indexed payments mentioned above, as well as non-indexed government transfers such as the Temporary Assistance to Needy Families. In addition, any private contracts with fixed nominal payments are unaffected by the tax. In particular, holders of existing bonds receive the same nominal interest payments as before, since the introduction of the tax does not change any contractual agreements between issuers and holders. Therefore, bondholders are not hurt by the consumption tax, since the output of a bond is cash, the consumption value of which does not decrease if prices do not increase. In contrast, owners of physical capital are hurt by the consumption tax. The value of output from such capital, and hence the value of the capital itself, decline because the owners are liable for the consumption tax when the produced goods are sold. As a result, if the price level does not increase, equity holders suffer the entire decline in existing asset values while debt holders are held harmless.

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[127] This assumes that the fraction of the pension that is taxed, and the applicable tax rate, are fixed.

[128] Food stamps are another example of an indexed transfer since the nominal value of food stamps available to individuals is indexed to the price of a designated basket of food.

**Changes in interest rates**

The replacement of the present income tax with a consumption tax could be expected to affect the level of interest rates. The ultimate effect depends on the nature of the demand for and supply of savings. At one extreme, suppose that the supply of capital is extremely responsive to the after-tax rate of return (for example, if capital is mobile across international borders and the aggregate supply of foreign capital is large relative to the supply of capital in the United States). Then the elimination of the income tax has no effect on the after-tax rate of return received by savers, since the world interest rate continues to prevail; interest rates are unchanged. At the other extreme, suppose that businesses have an inexhaustible menu of investment opportunities available to them that can yield a given before-tax rate of return. In this case, the elimination of the income tax leads to an increase in the after-tax rate of return and an equivalent increase in the interest rate. For intermediate cases, the interest rate changes in some measure between the extremes.

An increase in interest rates may increase the return on existing assets and thus help offset the reduction in wealth caused by the imposition of the consumption tax. The extent of this offset in any individual's case is sensitive to the pattern of consumption. If the individual is elderly, for example, and expects to consume his existing assets shortly after the consumption tax is introduced, any increase in return on those assets may do little to offset the one-time decrease in value of the assets. On the other hand, if the individual has a much longer consumption horizon, an increase in the return on existing assets may go a long way toward offsetting the one-time decrease in value.[129]

In the longer run, any increase in investment that is spurred by the switch to a consumption tax leads to a larger capital stock. With a larger capital stock, the productivity of labor (the extra output for an extra unit of labor services) is expected to increase, but the productivity of capital may be smaller, reducing equilibrium interest rates somewhat.

**Transition issues for individual consumption taxes**

The above discussion is relevant for the business-level taxation under a credit-invoice or subtraction-method VAT as well as for the cash-flow business tax. The individual consumption taxes, of either the tax prepayment of the cash-flow type, introduce an extra dimension for transition issues regarding the carryover of assets from the pre-consumption-tax regime. Independent of the issue of whether the value of those assets changes is the question of how to treat subsequent returns or dispositions of existing assets and liabilities.

Under the cash-flow method of an individual consumption tax, all cash returns to assets (such as interest and dividends) and all proceeds of asset sales are included in the tax base, with a deduction allowed for new savings. In the absence of transition rules, the sales of existing assets generates an increase in the tax base by the full amount of the proceeds, even if the assets were purchased with after-tax dollars. Existing basis is not available to reduce tax liability, resulting in a large windfall loss. On the other side of the balance sheet, the repayment of loan principal is

[129] David F. Bradford, *Fundamental Issues in Consumption Taxation*, AEI Press, 1996.

deductible (as is repayment of interest) under a cash-flow consumption tax. For loans entered into prior to the consumption tax, such treatment may yield large windfall gains to borrowers.

Under the tax prepayment approach of an individual consumption tax, the transition concerns are largely reversed. All cash returns to assets and all proceeds of asset sales are excluded from the tax base, and no deduction is allowed for new savings. Assets carried in to the consumption-tax regime may escape tax entirely on their returns, even if some portion may have been taxed under a continuation of present law. Accrued but unrealized capital gains escape taxation entirely. On the other side of the balance sheet, the repayment of interest is no longer deductible. For certain loans entered into prior to the consumption tax (*e.g.*, home mortgages), such treatment could yield large windfall losses for borrowers.

**Desirability of transition relief**

The net effect of the transition to a consumption tax on any individual taxpayer is sensitive to the composition of assets and liabilities and the patterns of wage receipts and consumption. Depending on the portfolio of assets a given individual holds, for example, the asset price changes described above may largely cancel out one another.

The transition from an income tax to a consumption tax may have a large impact on the tax burden across generations. In general, replacement of an income tax with a consumption tax shifts the tax burden toward the elderly, whose consumption often exceeds their current income. The one-time tax on wealth introduced by the consumption tax may fall heavily on the elderly, who in the aggregate hold a large share of existing assets.

Transition relief, such as grandfather rules for assets acquired prior to the start of the consumption tax or special rules for the amortization or remaining basis in assets, may appear desirable on equity grounds. Such relief, however, may reduce the efficiency gains of switching to a consumption tax. Some research on the effect of replacing an income tax with a consumption tax (on a revenue-neutral basis) finds that much of the efficiency gains arise through the consumption tax's one-time levy on existing capital.[130] Economic efficiency is generally promoted when individuals and business make decisions based on pre-tax returns rather than after-tax returns. Taxes generally result in a loss in efficiency to the extent that they distort economic behavior by causing individuals and business to make economic decisions based on after-tax returns that deviate from the decisions they would have made based on pre-tax returns. However, if unanticipated, the tax on existing capital is a lump-sum tax with no distortionary effect, and revenue generated from the lump-sum tax can be used to reduce consumption tax rates (*e.g.*, tax rates on business cash flow or individual compensation) and thereby promote economic efficiency by reducing the distortionary impact of taxes.[131] If

[130] See David Altig, Alan J. Auerbach, Laurence J. Kotlikoff, Kent A. Smetters, and Jan Walliser, "Simulating Fundamental Tax Reform in the United States," *American Economic Review*, vol. 91, no. 3, pp. 574-595.

[131] If individuals anticipate the switch to consumption taxation, the lump-sum nature of the wealth tax is reduced. Individuals may take steps to avoid the tax by accelerating consumption. Businesses may reduce investment in order to wait until the purchase of capital goods is expensed.

transition rules reduce the revenue gain from the lump-sum tax on existing wealth, then consumption tax rates may need to increase in order to make up for the loss in revenue. The increase in consumption tax rates leads to a loss in economic efficiency because the distortionary impact of taxes increases as tax rates increase (*i.e.*, as the wedge between pre- and after-tax rates of return increase).