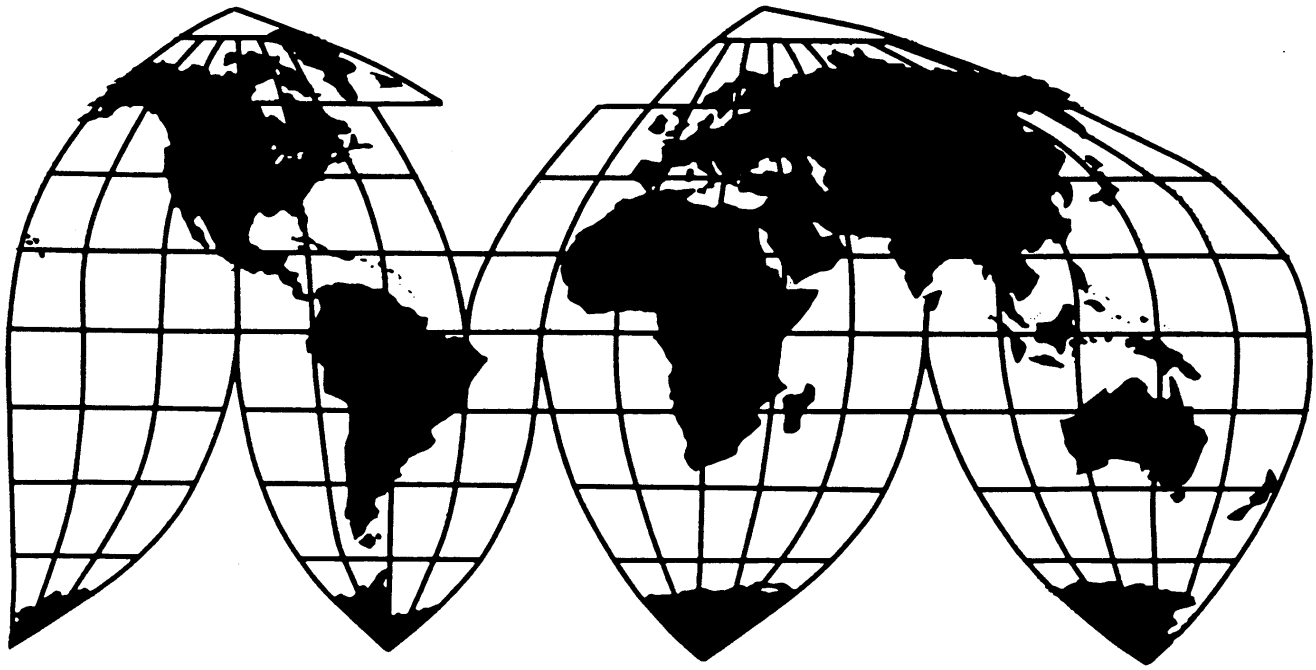
Implications for U.S. Trade and Competitiveness of a Broad-Based Consumption Tax

Investigation No. 332-389

Publication 3110 **June 1998**

U.S. International Trade Commission



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PREFACE

Following receipt of a December 9, 1997 request from the U.S. House Committee on Ways and Means (appendix A), the U.S. International Trade Commission instituted an investigation under section 332(g) of the Tariff Act of 1930 of *Implications for U.S. Trade and Competitiveness of a Broad-based Consumption Tax* (Investigation No. 332-389). This study provides an analysis of the implications for U.S. trade and competitiveness of replacing the current income-tax system with a broad-based consumption tax. Specifically, this report summarizes the various consumption-tax proposals, reviews the current economic analyses of this topic, and provides a discussion of the key technical issues that can significantly affect the relationship between tax policy and U.S. trade and competitiveness.

Copies of the notice of the investigation were posted in the Office of the Secretary, U.S. International Trade Commission, Washington, DC 20436, and the notice was published in the *Federal Register* (63 F.R. 2413) on January 15, 1998. The Commission scheduled a public hearing in connection with the investigation on March 5, 1998. However, no persons requested an opportunity to appear, and the hearing was canceled. In addition, interested parties were invited to submit written statements concerning the investigation; appendix B contains a copy of the *Federal Register* notice and information about the only submission received.

The information and analysis provided in this report are for the purpose of this report only. Nothing in this report should be considered to reflect possible future findings by the Commission in any investigation conducted under statutory authority covering the same or similar subject matter.

ABSTRACT

The House Committee on Ways and Means requested that the U.S. International Trade Commission examine the implications for U.S. trade and competitiveness of replacing the current income tax with a broad-based consumption tax. This report summarizes various consumption-tax proposals which include the Armey-Shelby flat tax, both the Schaefer-Tauzin version and the Lugar version of a national sales tax, the Nunn-Domenici unlimited savings allowance tax, and the Gibbons value-added tax; reviews the economic literature that analyzes the likely effects of consumption-based taxes on international transactions; and provides a discussion of key technical issues affecting the relationship between U.S. Federal tax policy and U.S. trade and competitiveness. The economic literature that was surveyed is largely theoretical since such a broad-based tax reform is unprecedented. The survey reveals that one of the more important effects of adopting a consumption tax is the likely increase in capital investment into the U.S. economy from abroad, at least in the short run. Most studies conclude that a change to a consumption-based tax system will attract foreign equity investment to the United States, as well as encourage U.S. firms to locate projects in the United States that might otherwise have gone abroad. However, it could also encourage U.S. multinational firms to shift debt capital to other countries. While the literature indicates that the net effect of these flows on the U.S. capital stock could theoretically increase or decrease, most studies indicate that net capital inflows are more likely. With respect to trade effects, since international capital and trade flows are inherently linked, the short-run changes in a country's capital account are accompanied by a change in its trade balance. To the extent that international capital flows into (out of) an economy, the trade balance moves towards deficit (surplus). In the long run, increases in investment from both foreign and domestic sources tend to enhance an economy's competitiveness by increasing its productivity.

EXECUTIVE SUMMARY

Several legislative proposals exist that would replace the current U.S. income tax system with a consumption tax. Such a tax could provide greater incentives for savings and investment. In general, it is expected that increased investments will increase productivity and national economic welfare. These productivity and welfare changes also imply changes in international transactions. On December 9, 1997, the U.S. House Committee on Ways and Means (the Committee) asked the U.S. International Trade Commission (the Commission) to investigate the implications for U.S. trade and competitiveness of a broad-based consumption tax. The Committee requested that the Commission summarize the various consumption tax proposals, review the economic analyses of the effects of consumption-based taxes on international trade, and provide a discussion of key technical issues that can significantly affect the relationship between U.S. Federal tax policy and U.S. trade and competitiveness.

The effects of a broad-based consumption tax on U.S. trade and competitiveness reported in this analysis are based on a review of the literature. The economic literature that was surveyed is largely theoretical since such a broad-based tax reform is unprecedented. Studies that have examined the effects of consumption-based taxes on international trade find that the resulting changes in investment, imports, and exports depend on the consumption tax structure. A major portion of the economic literature is theoretical and concentrates on developing the analytical framework for examining this issue. There is limited empirical research estimating the potential effects of a consumption tax on U.S. trade and competitiveness.

Several measures of competitiveness exist. For the purposes of this investigation, the Commission staff measures improvements in competitiveness as any economic change that enhances the productivity of U.S. domestic firms relative to foreign firms. Changes in U.S. competitiveness can thus result from changes in the U.S. capital stock, the flow of foreign capital into the United States, or changes in the international location of research and development (R&D) activity. These various types of capital investment are the most likely to be responsive to the United States adopting a broad-based consumption tax.

The Consumption Tax Proposals

This report summarizes the current tax system and compares it to the primary consumption-tax proposals that either have been formally submitted to Congress or that have been extensively discussed by legislators and the public. The main proposals that are reviewed include a flat tax, several versions of a national sales tax, an unlimited savings allowance (USA) tax, and a value-added tax (VAT). Each of the proposals is based on income or consumption that takes place in the United States.[1] For example, the Armey-Shelby flat tax and the Gibbons VAT are applied to income earned in the United States, other than investment income. The Schaefer-Tauzin and the Lugar sales taxes are based on individual consumption in the United States, and the Nunn-Domenici USA tax is based on individual consumption (income less new savings), plus the cash flow from U.S. business activities. While the flat tax and USA tax are formally based on the reporting and taxation of income, their intended base may be considered to be consumption rather than income, since they exempt savings or returns on savings.

[1] For ease of reference in this study, these proposals will be referred to by the names of those who introduced legislation or supported that form of consumption tax. These include the Armey-Shelby flat tax, the Schaefer-Tauzin and the Lugar national sales taxes, the Nunn-Domenici USA tax, and the Gibbons VAT.

A distinguishing characteristic of these proposals is the method by which U.S. exports and imports are taxed. The Armey-Shelby flat tax can be classified as an *origin-based* tax because exporters pay taxes on export-derived income, but business expenditures on imports are deductible. The remaining proposals — the Schaefer-Tauzin and the Lugar national sales taxes, the Nunn-Domenici USA tax, and the Gibbons VAT — are *destination-based* taxes because exports are untaxed, and business expenditures on imports are taxed.

Trade and Competitiveness Effects

The findings of this report are organized around the channels through which the tax changes would operate: (1) the domestic capital market, (2) the international capital market, (3) the goods market, and (4) transaction costs, compliance and enforcement, and transition issues. The primary trade and competitiveness effects of adopting a consumption tax will depend primarily on the extent to which capital investment from abroad flows into the U.S. economy, at least in the short run. Increases in capital investment tend to enhance an economy's competitiveness by increasing its productivity. Improvements in productivity generally lead to expansions in production and overall economic welfare. With respect to trade effects, since international capital and trade flows are inherently linked, the short-run changes in a country's capital account are generally accompanied by a change in its trade balance. To the extent that international capital flows into (out of) an economy, the trade balance moves towards deficit (surplus). In summary, four essential points emerge from this survey:

- **A broad-based consumption tax may increase the after-tax returns on domestic savings and investments.** Most studies conclude that a change to a consumption-based tax system would significantly increase domestic savings and equity investment, with a corresponding positive impact on U.S. gross domestic product and wage rates. However, the net effect on domestic interest rates is uncertain.

- **A consumption tax could attract foreign equity capital to the United States, as well as encourage U.S. firms to locate projects in the United States that might otherwise have gone abroad.** Studies indicate U.S. multinational firms would have an incentive to shift debt capital to other countries. While the theoretical literature indicates that the net effect of these flows on U.S. capital could either increase or decrease, most studies indicate that net capital inflows are more likely.

- **The economic analyses reviewed suggest that the tax-free status of exports under a destination-based consumption tax may have short-term effects but is unlikely to have a long-run effect on the overall U.S. trade balance.** First, these analyses conclude that the tax-free status of exports simply maintains a level playing field between domestic and foreign producers in domestic and foreign markets. Second, any increase in net exports in the short run is neutralized in the long run by exchange rate movements. However, the studies suggest that changes may occur in the composition of U.S. trade. For example, U.S. net exports of capital-intensive goods could increase, while net exports of labor-intensive goods could decrease.

- **If consumption taxation takes a form substantially simpler than the system it replaces, then reductions in compliance and enforcement costs could occur and would likely result in efficiency gains for the U.S. economy.** In addition, a consumption-based tax could enhance the status of the United States as a "tax haven" country; the more favorable tax treatment of U.S. business would mean that firms subject to foreign income taxation would tend to shift the reporting of profits to the United States to avoid higher taxes in other countries. However, a consumption tax could induce a one-time drop in asset values of pre-existing wealth, which may be perceived as inequitable. The extent of such changes in asset values, if any, ultimately depends on the nature of any transition provisions that are implemented.

CHAPTER 1
Introduction

On December 15, 1997, the U.S. International Trade Commission (Commission) received a letter from the House Committee on Ways and Means requesting that the Commission conduct an investigation under section 332(g) of the Tariff Act of 1930 on the effects on U.S. trade and competitiveness of replacing the current income tax system with a broad-based consumption tax. Several legislative proposals exist that, if enacted, would significantly change the current U.S. income tax system, including some that can be characterized as consumption taxes. Previous studies that have examined the effects of consumption-based taxes on international trade have found a wide range of effects on investment, imports, and exports, depending on the consumption tax structure.

This investigation provides an analysis of the implications for U.S. trade and competitiveness of replacing the current income tax system with a broad-based consumption tax. Specifically, the report summarizes the various consumption tax proposals, reviews the current economic analyses of this topic, and provides a discussion of the key technical issues that can significantly affect the relationship between U.S. Federal tax policy and U.S. trade and competitiveness.

Scope and Structure

This report is organized into three additional chapters. Chapter 2 briefly summarizes the current tax system and compares it to the primary consumption-tax proposals. The main proposals that have been introduced as legislation include the Armey-Shelby flat tax, the Schaefer-Tauzin and the Lugar sales taxes, and the Nunn-Domenici unlimited savings allowance (USA) tax. Finally, a value-added tax (VAT) proposed by former Congressman Sam Gibbons is also reviewed in chapter 2.

Chapter 3 presents a discussion of areas in which the above proposals might affect U.S. trade and competitiveness. It is based on a survey of the research contained in the economic literature and is organized around the market channels through which the tax operates: (1) the domestic capital market, (2) the international capital market, (3) the goods market, and (4) transaction costs, compliance and enforcement, and transition issues. Chapter 4 briefly summarizes the material in the previous chapters and synthesizes the overall implications or net effects that might be drawn from the literature survey.

In reviewing the economic literature, two useful insights about this body of information became readily apparent. First, there are few empirical estimates of the potential effects of a consumption tax on U.S. trade and competitiveness. A major portion of the economic literature surveyed is theoretical and concentrates on developing the analytical framework for examining this issue. The empirical studies[1] that exist are very recent and some of the first attempts by economists to estimate the effects of a consumption tax on U.S. trade and investment flows. A second concern is the difficulty involved in estimating these effects. The complexity of this issue does not allow the effects to be easily modeled either theoretically or empirically. Furthermore, because many of the theoretical results are ambiguous, any attempt at empirical estimation is extremely difficult.

Methodological Approach

For this investigation, the effects of a broad-based consumption tax on U.S. trade and competitiveness are derived from an analytical review of the literature[2] since no appropriate analytical model has yet been constructed to quantify the tax/trade relationship adequately. No original empirical analysis was undertaken by the Commission staff. The conclusions drawn in the report were based on empirical estimates from previous economic studies or, in cases where estimates did not exist, results that the staff could infer from the general discussion and consensus within the overall literature.

[1] These estimates are primarily derived from multisector simulation models. The two types of models used in these empirical studies were either computable general equilibrium models or neoclassical growth models.

[2] Appendix C contains a bibliography of the literature that was reviewed.

Several considerations should be kept in mind when interpreting the findings of this analytical survey. First, while drawing conclusions about the possible effects of switching from the current system to a consumption-based tax, this analysis of the literature did not consider changes to trade and competitiveness resulting from a change in the overall tax revenue collected by the Government.

Second, the existing literature is discussed and classified according to the four market categories listed above. These four categories were defined in order to simplify the discussion and exposition of the literature and to better understand the international implications of a consumption tax; however, in many respects, these distinctions are artificial since all four market factors are interdependent in the actual economy. For instance, the U.S. trade balance is closely related to the balance between savings and investment in the U.S. economy. The savings-investment balance is in turn directly related to the flow of equity and debt capital between the domestic and international capital markets. A change in any one of these market factors generally affects the others.

Third, in this report, the term "investment" when used without a modifier generally refers to physical capital investment, such as property, plant, and equipment. When referring to the financial instruments associated with physical capital, the term is generally modified, e.g., "equity investment" for financial instruments that establish ownership rights, such as stocks, or "debt investment" for bonds. A distinction is also made between "direct investment," which is associated with managerial control (i.e., in the affiliates of multinational firms), and "portfolio investment," i.e., passive ownership of securities without managerial control. This distinction is usually made in the context of foreign investments, in which residents of one country own capital in another country. In other cases, the context will establish whether the unmodified term "investment" is being used in one of the above modified senses. The reader should also note that the term "capital," representing an accumulation of periodic investments, may be used in various senses corresponding to those of "investment."

Finally, in assessing the effect of a consumption tax on U.S. competitiveness, the meaning of "competitiveness" as it is used in this report must be established. Several measures exist; however, for the purposes of the investigation, the Commission staff has adopted the following measure: improvements in competitiveness are interpreted as any economic change that enhances the productivity[3] of U.S. domestic firms relative to foreign firms. Changes in U.S. competitiveness can thus result from changes in the U.S. capital stock, the flow of foreign capital into the United States, or changes in the international location of research and development (R&D) activity. Among the variables that can affect productivity, these are most likely to be responsive to the United States adopting a broad-based consumption tax.

The Basic Economic Framework

The main arguments in favor of adopting a consumption tax are that economic gains would be realized from increases to savings and investment, capital accumulation, and personal and business incomes, as well as the removal of distortions in the allocation of capital. Less often cited as an argument in favor of a consumption tax is the positive effect that these proposals may have on international trade and competitiveness.

Many of the international effects of the tax reform proposals are assumed to flow directly from the major domestic effects, since a more efficient economy, whose firms have more capital to invest in less distorted ways, will presumably be more efficient in international markets. However, a typical argument made in favor of some of the consumption-tax proposals — namely the two versions of the sales tax, the USA tax, and the VAT — is that U.S. exporters will gain because they will be allowed deductions on exports which are currently taxed. In addition, it is argued that U.S. producers will benefit because foreign exports to the United States that are now exempt will be subject to taxation. Proponents of this particular argument suggest that a consumption tax will improve the market share of U.S. producers in domestic and foreign markets.

However, economists generally agree that border adjustments made for the taxation of imports and exports should have no direct effect or long-run effect on imports and exports for several reasons.[4] One counterpoint is that border adjustments simply maintain a level playing field between domestic and foreign producers in domestic and foreign markets. A second argument is that any short-run increase in

[3] Firm productivity can be either labor productivity (output per worker) or total factor productivity (output relative to a combined index of labor, capital, and other elements of production cost).

[4] For further discussion, see Feldstein and Krugman (1990), McLure (1987), Grubert and Newlon (1997), Aaron (1987), and the Joint Tax Committee (1995).

net exports resulting from border adjustments is likely to be neutralized in the long run by exchange rate movements.[5] Both of these counterpoints are more fully examined in chapter 3. Finally, regardless of the border adjustments, the predominant effects with respect to the tax/trade relation are likely to occur through international investment flows.

The effects of the consumption tax proposals on international investment flows are measured through the U.S. capital account. The U.S. capital account is basically the difference between U.S. domestic savings and investment from various domestic and foreign sources. More specifically, savings consists of savings by domestic households, businesses, and government while investment consists of domestic and net foreign investment. A net inflow of investment is measured when savings fall short of investment. A consumption tax will primarily affect three components of the U.S. capital account: domestic savings, investment by U.S. firms, and the relative demand for U.S. and foreign assets. Under the various proposals, savings and investment are likely to increase, and the relative attractiveness of U.S. over foreign assets should also increase.[6]

Furthermore, any tax change that affects international capital flows into the United States will also affect the U.S. trade balance. One of the fundamental concepts of international trade theory is that a country's trade balance, or the current account, is related to its capital account. Specifically, a trade surplus will equal the surplus of savings over investment, whereas a trade deficit will occur when savings fall short of investment. The impact of a consumption tax on the trade balance ultimately depends on how the capital account responds. The likely response of each of the savings and investment components to a consumption tax is examined in chapter 3.

A Comparison to Other Countries

Because proponents of a consumption tax argue that it will improve the competitiveness of the United States relative to its trading partners, it is useful to examine the extent to which other industrialized countries rely upon consumption taxes. The various types of taxes used by these countries include individual income taxes, corporate income taxes, employment taxes, property taxes, general consumption taxes, and specific consumption or excise taxes.[7] Relative to other industrialized western countries, the United States generally relies more heavily on income taxes and less heavily on consumption taxes.

Table 1-1 presents a comparison of the types of taxes imposed by G-7 countries and Mexico to collect tax revenue. It is readily apparent that most countries diversify their tax revenues, with taxes on income and profits usually gathering more revenue than taxes on general consumption. General consumption taxation (taxation on goods and services other than taxes on specific goods and services), which in the United States consists of State and local government sales taxes, takes the form of value-added taxes in most other Organization for Economic Cooperation and Development (OECD) countries. In Canada, a mix of value-added taxation and sales taxation is used. For no country in the table does the collection of general taxes on goods and services exceed 20 percent of total tax revenue.

In addition, some OECD countries rely slightly more than the United States on taxation on general consumption. In Iceland, taxes on general consumption accounted for 31.8 percent of total tax revenue in 1994, while in Turkey general consumption taxes brought in 30.4 percent of total revenue. By comparison, the share of taxation on income and profits in total taxation was 33.3 percent in Iceland and 29.7 percent in Turkey, similar to the share of consumption taxation. It may also be observed in table 1-1 that the United States relies proportionately more on income-and-profits tax monies than do most of its major trading partners, Canada being the only exception.

[5] See Hines (1996a) and Hufbauer (1987).

[6] For further discussion on this topic, see Aaron (1987).

[7] Adding complexity to this broad variety of national taxes are the myriad taxes used by State and municipal level governments. For instance, in the United States, no Federal broad-based consumption taxes exist; however, many State and local governments impose sales and property taxes.

Table 1-1
International comparison of taxation for selected OECD countries, 1994

	OECD[1]	Canada	France	Germany	Italy	Japan	Mexico	United Kingdom	United States
Tax revenues as percentage of GDP	38.4	36.1	44.1	39.3	41.7	27.8	18.8	34.1	27.6
Tax revenues as percentage of total tax revenues									
Income and profits taxes	35.4	44.4	17.7	29.4	34.7	37.7	31.0	35.7	44.6
Social security taxes	25.9	16.9	43.4	39.1	31.2	35.1	19.6	18.0	25.5
Payroll taxes	0.8	0.0	2.4	0.0	0.3	0.0	0.0	0.0	0.0
Property taxes	5.2	11.0	5.3	2.8	5.4	11.5	0.0	10.8	12.0
Taxes on goods and services[2]	31.9	26.3	27.1	28.7	28.3	15.5	47.7	35.3	17.9
Value-added taxes	n/a	8.8	16.9	18.1	15.4	5.3	16.1	19.8	0.0
Other taxes on general consumption[3]	n/a	8.8	0.3	0.0	0.0	0.0	0.0	0.0	7.9
Excise and other specific taxes	12.7	8.7	9.1	9.5	10.6	8.2	30.4	13.8	7.9
Other taxes	0.8	1.3	4.0	0.0	0.0	0.3	1.7	0.2	0.0

[1] Unweighted average of 28 countries.
[2] Besides the enumerated categories, includes also taxes on the use of, or permission to use, goods and services, such as vehicle and hunting licenses, and sales licenses for liquor and tobacco.
[3] Sales taxes, cascade taxes, and other general consumption taxes.

Note.—Tabulations include tax revenues of subnational governments but exclude revenues of government enterprises.

Source: OECD, *Revenue Statistics of Member Countries 1965-1995* (OECD: Paris, 1996) and USITC staff calculations.

CHAPTER 2
Summary of Recent Consumption-Based Tax Reform Proposals

Many tax reform proposals have been put forward in the past few years including a flat-tax plan proposed by House Majority Leader Dick Armey and Senator Richard Shelby (henceforth the Armey-Shelby flat tax), two versions of a national sales tax (one proposed by Representatives Dan Schaefer and William Tauzin and the other proposed by Senator Richard Lugar), the unlimited savings allowance (USA) tax proposed by Senators Sam Nunn and Pete Domenici (Nunn-Domenici USA tax), and the value-added tax (VAT) favored by Representative Sam Gibbons (Gibbons VAT). All of these proposals envision a fundamental change in the philosophy underlying the national tax system, including a fundamental respecification of the tax base. The tax base can be either a consumption base, an income base, or some combination of the two as is the case currently in the United States. A consumption-based tax would tax expenditures, but not savings, while an income-based tax would tax all income including income that is saved. All of the plans discussed here envision, in one way or another, a consumption-based tax system.

This chapter describes the current income tax system, with particular attention to its treatment of border transactions, and contrasts this system with the corresponding features of the proposed alternative tax plans (see table 2-1). However, the implications of tax

Table 2-1
Alternative U.S. tax treatments of international transactions

	Tax regime				
Type of transaction	**Current system**	**Armey-Shelby flat tax**	**Schaefer-Tauzin National Retail Sales Tax[1]**	**Nunn-Domenici USA tax**	**Gibbons VAT**
Individuals					
Foreign investment income . . .	Taxed[2]	Untaxed	Untaxed	Untaxed	Untaxed
Domestic investment income . .	Taxed	Untaxed	Untaxed	Taxed[3]	Untaxed
Foreign labor income consumed abroad	Taxed[4]	Taxed	Untaxed	Taxed[2]	Untaxed
Foreign labor income consumed in U.S.	Taxed[2]	Taxed	Taxed	Taxed[2]	Taxed
Domestic labor income consumed abroad	Taxed	Taxed	Untaxed	Taxed	Untaxed
New Savings	Taxed	Taxed	Untaxed	Untaxed	Untaxed
Corporations					
Foreign source dividends, interest, and royalties	Taxed[2]	Untaxed	Untaxed	Untaxed	Untaxed
Export receipts	Taxed[5]	Taxed	Untaxed	Untaxed	Untaxed
Import receipts	Deductible	Deductible	Nondeductible	Nondeductible	Nondeductible

[1] The National Retail Sales Tax is the version proposed by Representatives Schaefer and Tauzin and has many features in common with the earlier sales tax proposed by Senator Lugar.
[2] Foreign tax credits can be used to offset some or all of associated U.S. tax obligations.
[3] Reinvested investment earnings are “new savings” and are not taxed.
[4] Taxpayers can exclude a certain portion of foreign income from U.S. taxation or apply foreign tax credits against associated U.S. tax obligation.
[5] Only a part of receipts need be included in taxable income.

Source: Hines (1996a), adapted and extended by USITC staff.

reform for international trade and competitiveness go beyond the tax treatment of international flows of income and investment. To the extent that tax reform alters how returns to labor and capital are taxed, or the relative levels of savings, investment, and consumption are encouraged, these reforms will have major implications for investment and consumption decisions. The analysis of the likely implications of these differences will be deferred to chapter 3, while a general description of the differences themselves are presented here.

The Current Tax System

The current U.S. Federal tax system is primarily a tax on the worldwide income of U.S. citizens, resident individuals, and corporations. For individuals the tax rates depend on filing status (single, married) and on income level, with marginal tax rates currently graduated from 0 to 39.6 percent, and with long-term capital gains taxed at a maximum rate of 28 percent in 1997. In addition, employment taxes are used to finance Social Security, Medicare, and unemployment insurance. There are also estate and gift taxes, excise taxes on certain goods and services, and tariffs on many imported goods. In addition to the Federal taxes, most States and localities collect income taxes, as well as general sales taxes, and real and personal property taxes.

Personal Income Taxes

The income subject to Federal income taxation is income from whatever source derived, whether from wages and salaries, interest and dividends, royalties, rents, pensions, profits, or other sources, foreign or domestic. While income from foreign sources is taxable, taxes paid to foreign jurisdictions are generally credited. Income is subject to deductions for medical expenses, business expenses, capital losses, contributions to retirement plans, alimony, and certain moving expenses. Before being taxed, income is further reduced by applying personal exemptions and either standard or itemized deductions to arrive at "taxable income." The final tax liability is calculated on the basis of this taxable income using a graduated scale depending on the level of income, and the tax liability may then be subject to further additions and subtractions.

Business Taxes

Corporations organized under the laws of any State or the District of Columbia are taxed on their worldwide corporate income. Income consists of profits, rents, royalties, interest, and certain capital gains, after deductions for business expenses (including wages, employee benefit programs, bad debts, taxes, and advertising, cost of inputs, and depreciation of capital assets). Besides these allowable deductions, there is a credit for taxes paid to foreign countries (i.e., foreign tax credit).[1] Taxes on unrepatriated foreign profits may be deferred, with limits, until those profits are paid as dividends to the U.S. parent corporation. Capital expenses are deducted over time (depreciation), and various other expenses may be carried forward from year to year, including net operating losses. Distributions of profits to shareholders (as dividends) are taxed as net income to the shareholders, and are thus taxed twice.

Other Taxes

A gift tax is imposed on gifts made by a U.S. citizen or resident, and on gifts by nonresidents of property that is located in the United States at the time of the gift. Gifts with a value of less than $10,000 are generally not taxed.

An estate tax is placed on the taxable estate of persons who were citizens or residents at the time of death, and on certain property of nonresidents located in the United States. Generally, the first $625,000 of an estate is excluded from taxation (this amount is gradually being increased to $1 million). Since 1976 the gift and estate taxes have been unified so that a single, graduated rate schedule applies to combined gifts and bequests.

Employment taxes are on covered wages of workers. These include the Social Security tax, which is comprised of the old age, survivors, and disability insurance (OASDI) tax equal to 6.2 percent of covered wages (paid by employees, with an equal amount paid by employers), and the Medicare hospital insurance tax equal to 1.45 percent of covered wages, the percentage again paid by both workers and employers. Employers

[1] Under the status quo, multinational firms with foreign-source income are able to reduce their U.S. tax liability on that income dollar-for-dollar for foreign taxes paid. This means that firms pay the U.S. corporate income tax rate on all foreign-source income, but that the U.S. Treasury only receives revenues for those taxes that have not already been paid to foreign governments. When foreign taxes exceed U.S. taxes due on foreign-source income, the excess foreign tax credits cannot be used against current taxes on U.S.-source income but may be deferred to future years.

are also subject to a Federal unemployment insurance payroll tax equal to 6.2 percent of the covered wages of employees, with a credit of up to 5.4 percent allowed for State unemployment insurance taxes.

Finally, a variety of Federal excise taxes are placed on the production, importation, or sale of specific goods or services, either on a per-unit or ad valorem basis. These goods and services include motor fuels, alcoholic beverages, tobacco products, firearms, air and ship transportation, coal, telephone communications, certain wagers, certain environmentally hazardous activities, and luxury automobiles. Some of these taxes are earmarked for specific trust funds to support designated expenditures (such as the Highway Trust Fund); others are designed, at least in part, to provide disincentives to certain activities or expenditures. As a whole, these excise taxes do not constitute a broad-based or comprehensive national sales tax.

Alternative Tax Proposals

The various proposals that have been submitted to reform the tax system share general features distinct from the current tax system. The current system now in place taxes the incomes of current residents, regardless of source (though with some concessionary exclusions for foreign source income), while each of the proposals is aimed at income or consumption that takes place in the United States. A principal rationale espoused for these tax proposals is ease of enforcement and accounting relative to the current income tax system. Income is often considered to be less easily observable than consumption, and income can often be shifted among various sources or across time periods to take advantage of tax rate differences. Presumably consumption behavior is not so flexible. The following sections provide a discussion of pertinent details of the various tax proposals, their accounting methods, and their border implications.

Armey-Shelby Flat Tax

A "flat tax" is an income tax with a single marginal tax rate. If the current tax system were adjusted to replace the various tax brackets with a single bracket and single rate, it would constitute a flat tax. Most actual flat tax proposals go beyond this to redefine the tax base by eliminating many of the deductions and exclusions in the current tax law. In principle the tax base could be either consumption or income, the difference being that a consumption-based tax would not tax new savings, while an income-based tax would tax all income including that which is saved. In general, returns to savings (interest, dividends, and certain capital gains) are considered as income when they are withdrawn, but as new savings when they are reinvested.

Introduced by House Majority Leader Armey as H.R. 1040 on March 12, 1997 (a companion bill in the Senate was introduced by Senator Shelby as S. 1040), the Freedom and Fairness Restoration Act of 1997 proposes to abolish the current income tax system and replace it with a single tax rate for both individuals and business. As specified in the legislation, the single tax rate would be 20 percent initially, and then be reduced to 17 percent beginning in 1999. All income in the economy is taxed one time at the same rate. Taxes on wage and pension income are collected from individuals and taxes on all other income, including investment income, are collected from businesses.

Tax on Individuals

Individuals would be taxed on their wages (20 percent in 1998 and 17 percent thereafter), retirement distributions, and unemployment compensation, and on the income of their dependents under the age of 14, after subtraction for allowances. Interest, dividends, capital gains, other investment income, and foreign earned income would not be taxed. The "basic standard deduction" would be $22,000 ($23,200 in 1999) for a married couple filing a joint return; $14,400 ($15,200 in 1999) for a head of household; and $11,000 ($11,600 in 1999) for an individual. The "additional standard deduction" would be $5,000 ($5,300 in 1999) for each dependent not required to file a tax return. The allowances would continue to be adjusted for inflation. This system does not affect Social Security and Medicare payroll taxes and Social Security benefits are not taxed.

Tax on Business Activities

Businesses would be taxed at the same (20 and 17 percent) single tax rate as individuals. The tax would apply to all business activity whether by an individual, partnership, corporation, or otherwise. Business income subject to tax would be gross active income, i.e., income other than investment income such as interest, dividends, or proceeds from the sale of stock. This income would be reduced by a series of allowable expenses. Deductions would be allowed for the cost of business inputs, cash wages, and contributions to qualified retirement plans. The business tax is similar

to a subtraction-method VAT;[2] except that in the VAT, wages are not a deductible business expense. Under the flat tax, tax on compensation is paid through the personal tax; and under most VATs, it is paid by the employer as part of value added. To ensure that compensation is taxed once, tax-exempt organizations that pay noncash compensation or retirement contributions would be subject to an excise tax.

Allowable business input deductions include the amount paid for property sold or used in the activity; the amount paid for services used in the activity; and any tax paid to a Federal, State, or local government on the purchase of property or services used in the activity. However, interest and noncash benefits would not be deductible. If businesses experience excess losses, the excess loss can be carried forward indefinitely and deducted from future profits. Border adjustments under this proposal would be origin-based rather than destination-based; i.e., profits from export sales are taxable, while purchases of imports are deductible business expenses.

Schaefer-Tauzin National Sales Tax

On June 19, 1997, Representatives Dan Schaefer and William Tauzin (and other cosponsors) introduced H.R. 2001, known as the National Retail Sales Tax Act of 1997 (NRST). The Schaefer-Tauzin NRST would apply an across-the-board 15 percent sales tax to the final retail sales of all goods and services. This resolution proposed that: 1) personal and corporate taxes, estate and gift taxes, and capital gains taxes be replaced with a broad-based, single-rate national sales tax on goods and services; 2) the level of the national sales tax be set at a level that raises an equivalent level of revenue as the current Federal income tax; 3) the Federal Government work with the States to develop a State-based system to administer the national sales tax; and 4) the IRS be abolished.

One principle of the NRST is that tax should not be collected on an item more than once. Thus tax would be collected only on the final retail sale of the item, not on any of its inputs. Sales of used goods would be taxed, but the tax on the used portion would be rebated to the original purchaser. Interest on mortgages or other loans is not considered consumption, and is therefore not taxed (although the bill's authors acknowledge that fees for financial services are taxable, and distinguishing such fees from interest may be problematical). *De minimis* sales, casual or isolated sales by persons not engaged in trade and with gross receipts under $2,500 per transaction or $10,000 per year, are exempt from tax. Finally, the tax is destination-based: exports would not be taxed, but imports would be taxed.

On January 21, 1997, Senator Richard Lugar introduced S. Res. 16, a "sense of the Senate" resolution that the income tax should be eliminated and replaced with a national sales tax. In most respects the Lugar resolution resembles the Schaefer-Tauzin bill, except that the Lugar resolution would repeal the 16th amendment to the Constitution (the income tax amendment).

In principle, a national retail sales tax should have approximately the same incidence and tax base as a VAT, since it taxes the total value of goods and services paid by the final consumer. There are some important practical differences, however. A VAT tallies the value added to a product or service at different stages of the production process, cumulatively adding tax to the cost of the item and crediting intermediate purchasers for this element of the cost so that the total tax is paid at the final retail transaction. Thus, a retail sales tax greatly lowers the administrative burden of the tax, since many fewer taxpayers (retail sales agents) maintain documentation and submit receipts to the government.[3] The sales tax is also more transparent than many VATs, since the amount of the tax at the point of retail sale is clearly visible.

A great many factors can complicate the determination of the incidence of a sales tax, and the tax base. In most State sales tax systems, services are only partially taxed. Groceries and other goods may be untaxed in order to introduce a degree of progressivity into the tax. Business purchases of goods for resale may be exempt, but other business expenses may not be. The Schaefer-Tauzin NRST would tax all goods at retail, but not those purchased as inputs or for resale. It introduces some progressivity by allowing a tax credit for expenditures up to the poverty level. The NRST envisions that State governments would handle collection of this tax, and would receive a fee equal to 1 percent of collections to offset their expenses. In this and other tax reform proposals harmonization of the NRST with State sales tax provisions most States currently have income taxes that rely heavily on the existing Federal income tax collection system.

[2] A firm is taxed on the net value added, determined by subtracting the value of inputs from the value of sales. See also the discussion in the following section on the Gibbons valued-added tax.

[3] On the other hand, it may be easier to abuse the system. In particular, small businesses and self-employed individuals are able to evade sales taxes to some extent by claiming that some purchases intended for personal use are actually business purchases.

Nunn-Domenici USA Tax

On April 25, 1995, Senators Sam Nunn and Pete Domenici introduced S. 722, the USA Tax Act of 1995, to replace the Federal individual and business income taxes. "USA" here stands for unlimited savings allowance. This proposal would include, in the tax base, wages, salaries, fringe benefits, interest, dividends, and capital gains, rent, profits, and reductions in net savings. The Federal personal income tax is revised and the Federal business income tax is replaced by a VAT.

This legislation would replace the current individual income tax with a "savings-exempt income tax:" a three-tiered graduated income tax, with an unlimited deduction for net new savings (including reinvested dividends, interest, and capital gains). "Net new savings" is defined as additions to qualified savings assets during the year, less any withdrawals from savings. Borrowing would be treated as a reduction of the amount of net savings, but not below zero. Interest income, except for tax-exempt bonds, would be taxable. Personal and "family living expense" deductions would be allowed, similar to current filing status (single, married) and standard deductions. Certain itemized deductions (home interest, charitable contributions) would be allowed in addition to a standard deduction, where current law allows them in place of the standard deduction. Deductions for State and local taxes, and for medical expenses, would be eliminated. A credit for foreign taxes paid would be allowed, as in the current system.

Like the Armey-Shelby flat tax, the Nunn-Domenici USA tax imposes a subtraction-method VAT on businesses. The tax is imposed on "gross profits," defined as the amount by which taxable receipts exceed business purchases. Taxable receipts are receipts from the sale or lease of property or the performance of services in the United States, but do not include financial receipts such as interest, dividends, or the proceeds of stock sales. Deductible business purchases include any amount paid to purchase property, or for the use of property or services, for use in a business activity, but do not include compensation to employees and interest payments.

Gibbons Value-Added Tax

Former Congressman Sam Gibbons of Florida proposed replacing the current Federal corporate and individual income taxes with a simplified value-added tax, or VAT.[4] A value-added tax is a tax imposed on the "value added" at each stage in the production of goods or services. It can be thought of as the difference in value between a firm's purchases of inputs and its sales of outputs. The most common calculation of value added for taxation purposes is the credit-invoice method. Under this method, a seller at each level of a production process incurs a tax obligation on the value of its sales, and the tax is recorded on the sales invoice. At the end of the tax period, value-added tax obligations are reduced by the credits on the invoices of purchased products, so that the net tax paid is based on the difference between the tax charged on final sales and the tax reported on purchased inputs, including wages. The final purchaser of a product or service does not pay a tax on sales (since he/she does not resell the product or service, or use it as an input to a product that is sold), and does not receive a credit for the value-added tax paid.

An alternate accounting method is the subtraction method. Under this method, a firm is taxed on the net value added, determined by subtracting the value of inputs from the value of sales. For given tax rates and values of purchases and sales, the two methods should yield equivalent taxes. A subtraction-method VAT is used as the business component of both the Armey-Shelby flat tax and the Nunn-Domenici USA tax.

Under the principle that the tax is intended to be imposed on domestic consumption, border adjustments are typically made for imports and exports under VAT systems. The most common export adjustment is known as zero rating. Exports are assigned a tax rate of zero; thus (under the credit-invoice accounting method), the exporter is assessed no tax on its value added and thus does not invoice the purchaser for any tax, but the exporter receives a credit for the tax portion of purchased goods. The final tax on exported goods is zero. Importers, on the other hand, are assessed tax on the full value of imported goods, since taxes on these goods and any inputs to them have not been paid

[4] Congressman Gibbons did not introduce his proposal as formal legislation, but his name has come to be associated with such tax reform proposals in the United States. He supported the adoption of such a tax in his testimony before the Bipartisan Commission on Entitlements and Tax Reform on October 6, 1994.

Summary of Tax Reform Proposals

The tax reform proposals outlined above differ in many details, but they share the common characteristic of replacing the current income tax with a broad-based consumption tax. The principal arguments in favor of a consumption tax are generally considered to be the efficiency gains that would be realized. A consumption tax would increase savings and investment, and thereby enhance capital accumulation and personal income, remove distortions in the allocation of capital, and eliminate distortions in the financial structure of firms (Hubbard, 1997). Less often cited as an argument in their favor is the impact these proposals might have on international trade and competitiveness.

As discussed earlier, many of the international effects of consumption-based tax reform proposals are assumed to follow from the major domestic effects, since a more efficient economy, whose firms have more capital to invest in less distorted ways, will presumably be more competitive in international markets. In addition, direct interactions between domestic tax policies and the world economy arise in some part from the way border adjustments are made for the taxation of imports and exports. Among the proposals listed above, only the Armey-Shelby flat tax is origin-based, taxing exports and exempting imports. The other proposals are destination-based, taxing imports rather than exports. More important international consequences of these consumption-based tax reform proposals are likely to arise from changes in the treatment of international capital flows. For instance, in all of the proposals foreign dividends and other foreign earnings are generally untaxed.

CHAPTER 3
International Effects of Consumption-Based Tax Proposals

The effects of switching to a broad-based consumption tax operate simultaneously through a number of different economic channels, some obvious, others more subtle. Moreover, since a relatively simple consumption tax would replace the highly complex current system of taxation, many of the anticipated effects depend on the removal of the elaborate system of tax incentives and disincentives under the status quo. Thus, definitive statements about the full effects of a broad-based consumption tax reform are impossible, and any insights provided must be considered to be tentative at best. Nonetheless, there appears to be a consensus regarding certain likely effects of changing to a consumption tax.

The following summary focuses on effects of consumption–based tax systems on international trade and the activities of multinational firms, particularly international investment decisions. The summary is indicative of the types of issues raised in the literature, but is by no means exhaustive. It makes extensive use of the recent summaries in Grubert and Newlon (1995 and 1997) and Hines (1996a). The discussion of these potential effects is divided into four parts:

- Effects on domestic capital markets, especially changes in the rate of savings and investment;
- Effects on international capital markets, such as increases or decreases in foreign direct investment;
- Effects on goods markets, particularly the relative prices of internationally traded goods; and
- Possible effects on transactions costs of compliance with and enforcement of tax laws. Some miscellaneous topics such as foreign government reactions and the effects of the transition from the old to the new system are also grouped under this heading.

Domestic Capital Market

A principal reason put forward for changing to a consumption-based tax system is to increase the rate of domestic savings and investment, in order to enhance the productivity and competitiveness of domestic industry.[1] The extent to which increased domestic savings is translated into increased domestic investment depends in large part upon the linkages between the domestic and international capital markets, on the tax systems faced by both U.S.-based and foreign-based corporations in other countries, and on the balance between equity investment and debt investment. This section will discuss these topics, although a deeper discussion of the critical role of international capital markets (especially with respect to international trade) follows in the next section.

Interest Rates

Because of the stimulus to domestic savings, it is often argued that real interest rates will fall substantially under consumption tax reform. Under one widely cited estimate (Hall and Rabushka, 1995), real interest rates would fall by as much as one-fifth under the Armey-Shelby flat tax plan. There is some controversy to this argument. Since after-tax returns on savings and investment increase simultaneously, the supply and demand for capital increase simultaneously, and therefore there would be an indeterminate

[1] In some theories of economic growth, the rate of technological change accelerates with increased capital investment, leading to both new products and cost-reducing new processes, and thus increases in the overall competitiveness. Specifically, these growth theories argue that investment leads to technological improvements that have spillover effects that increase the long-run growth rate of domestic output. Such improvements are often described in the context of improvements in the variety of goods and services provided in the economy and improvement in the quality of goods provided (Grossman and Helpman, 1991; and Barro and Sala-i-Martin, 1995).

equilibrium effect on interest rates. Martin Feldstein (1995) has argued that capital demand is more sensitive to after-tax returns than is capital supply, so that a consumption tax reform could increase real interest rates. The Hall-Rabushka argument, where capital supply is more responsive, is depicted in figure 3-1. The Feldstein argument, where capital demand is more responsive, is depicted in figure 3-2. If interest rates do fall, the availability of capital for domestic investment will still depend heavily on international capital markets, as discussed in detail below.

In both figure 3-1 and 3-2, the real after-tax interest rate (R) is graphed on the vertical axis, while the real volume of savings and investment (I) is graphed on the horizontal axis. The graphical analysis assumes that U.S. capital markets are self-contained, so that net international capital flows are zero and domestic savings equal domestic investment. This assumption is relaxed in the section on international capital movements below. The demand for investment, represented by the curves labeled D, increases as the interest rate falls, while the supply of savings, represented by the curves labeled S, increases as the interest rate rises. In the initial equilibrium, at point E1, the demand for investment (D1) and the supply of savings (S1) are equalized, yielding a level of investment of I1 and an interest rate of R1.

In the Hall-Rabushka case (figure 3-1), adoption of a consumption tax increases both the supply of savings and the demand for investment, to S2 and D2 respectively. Savings is assumed to be more responsive to the tax reform than is investment. The level of investment increases from I1 to I2, while the interest rate declines from R1 to R2. In the Feldstein case (figure 3-2), the supply of savings and the demand for investment again both increase, to S3 and D3. But since the demand for investment is now assumed to be more sensitive to the tax reform than the supply of savings, the interest rate now rises from R1 to R3. Investment again increases, from I1 to I3.

Figure 3-1
Hall-Rabushka case

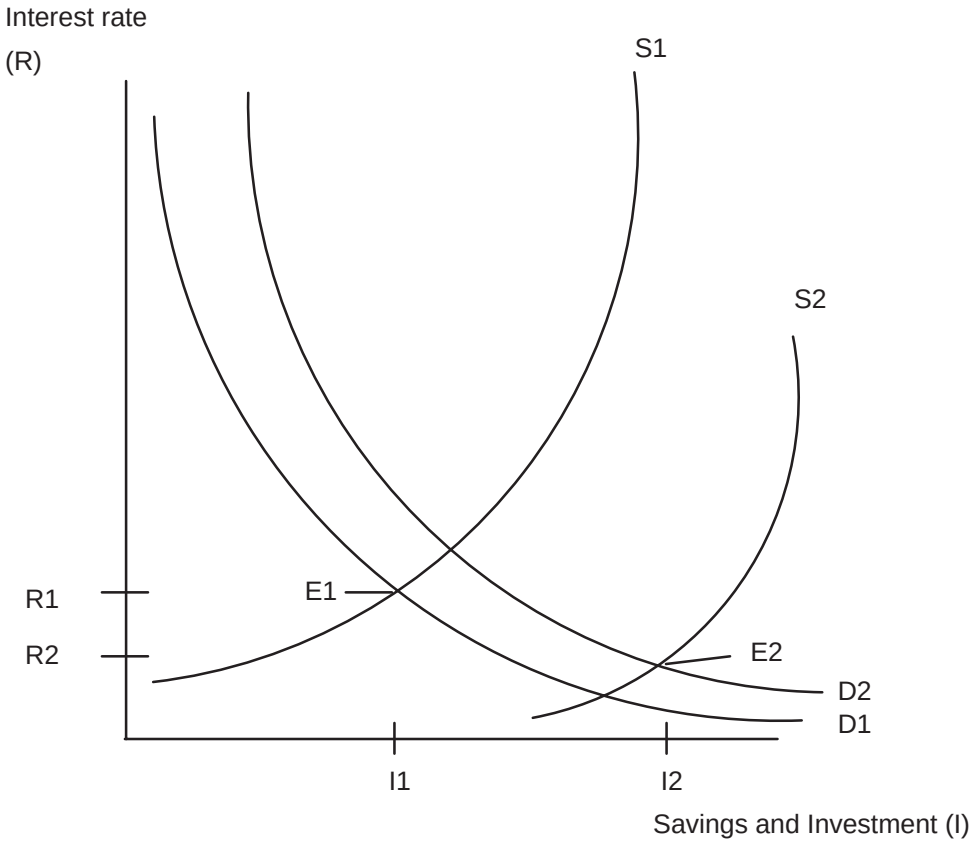
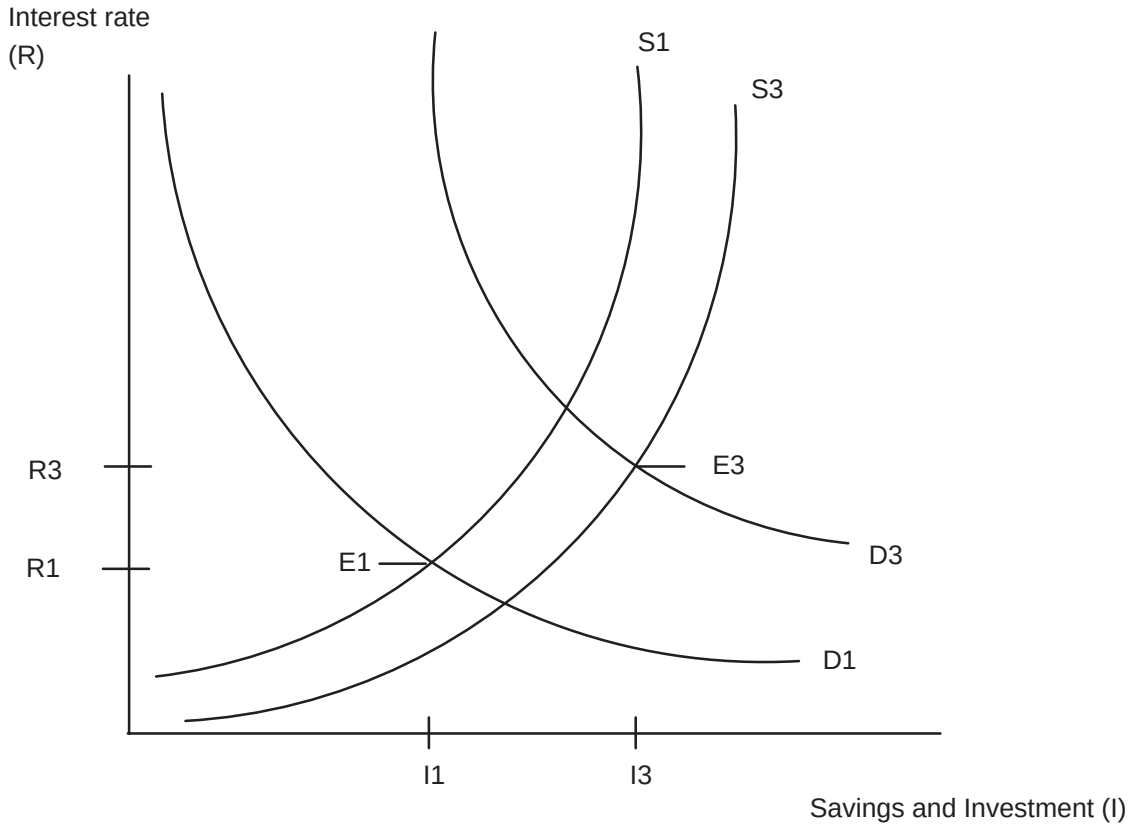


Figure 3-2
Feldstein case



Thus, while economic theory implies that both savings and investment would increase under a consumption tax, the direction of interest rate changes is *a priori* ambiguous and depends on empirical assessment of the relative sensitivities of savings and investment to the after-tax interest rate.

In addition, the mix between investments financed through equity and lending is affected by the adoption of a consumption tax. It is likely that investment in equity in the United States would increase, both on the part of domestic investors and multinational firms. Grubert and Newlon (1995) demonstrate that a consumption-based tax will generally make it more favorable for a U.S. multinational corporation to invest through equity in the United States rather than abroad. Generally, foreign-based firms would also find that a U.S. consumption tax would favor equity investment in the United States, although any incentives for foreign-based multinationals would continue to depend on the tax laws of their home countries. In some circumstances (in particular, if the U.S. adopts an origin-based tax and the foreign country does not allow a foreign tax credit on taxes paid in the United States) such firms may find a disincentive to invest in the United States. Furthermore, even though equity-financed investment in the United States would increase, elimination of the tax deduction for interest expenses would provide incentives for multinationals to shift investment financed by borrowing to their foreign affiliates (Grubert and Newlon 1997).[2]

Since interest income would no longer be taxable and interest costs no longer deductible, consumption taxation would tend to increase business preference for raising capital through equity financing rather than debt financing in the United States (even in the presence of lower interest rates). This could have implications for international trade depending on the current pattern of equity and debt financing in traded-goods sectors. If export goods sectors currently favor equity financing, for example, and find it relatively easier to raise additional capital after a tax

[2] In his commentary on Grubert and Newlon's 1995 article, Avi-Yonah (1996) argues that foreign countries are likely to respond to the adoption of a consumption tax in the United States by extending worldwide taxation of their resident multinational corporations, in an attempt to capture some of the tax revenue "foregone" by the United States.

reform, productivity and competitiveness might be enhanced.

Grubert and Newlon (1997) argue that, while a shift to a consumption tax would have a fairly strong positive effect on investment in the business sector, the possibility of a decline in interest rates would tend to cause foreign debt to become relatively more attractive to investors, in which case capital would be expected to flow out of the presently favored housing and State and local government sectors of the U.S. economy and into foreign debt markets.

Investment Allocation

The current tax system favors investments in certain sectors of the economy. The allocation of investment to these sectors will be changed by the adoption of a consumption-based tax. In discussing the relative merits of consumption taxes versus income taxes, economists frequently present their arguments in terms of simplified, idealized versions of these taxes. Practical analysis is complicated by the fact that the actual Federal income tax system departs substantially from an idealized simple income tax. Under a theoretically ideal income tax, income is measured accurately, and there is no discrimination between various sources of income. Only economic depreciation of capital is deductible, which is the "true" amount by which it reduces income and is a much smaller amount than the total purchase cost of capital. Therefore, the concept of an ideal income tax is useful in evaluating whether a tax system allows the optimal allocation of investment.

The Federal income tax system in the United States treats different types of income differently and does not measure true economic income perfectly. For example, accounting depreciation for tax purposes is not necessarily equal to economic depreciation, and nominal interest is taxed, rather than real (net of inflation) interest. Also, investment in certain sectors is tax-favored under the status quo, including owner-occupied housing, the activity of State and local governments, and pension funds.[3] The effects of establishing a consumption tax are sometimes described in comparison with a simplified, ideal income tax, rather than with the system actually in place. Chapter 2 pointed out that the current Federal tax system consists of an income tax with exemptions and other modifications, as well as excise taxes, payroll taxes, and other components. These factors are often not considered in analyses of a consumption tax, but they must be taken into account in order to construct a clear picture of how the switch to a consumption tax could actually work. For example, Engen and Gale (1997), in a general equilibrium model of the effects of a consumption tax, find that tax reform would increase savings only slightly, since much of current U.S. savings already takes place in tax-preferred forms (life insurance, home ownership, pensions, and IRAs). In their model, the savings rate would rise modestly from 6.1 percent to 6.6 percent five years after the tax reform takes place, and stabilize at 6.4 percent thereafter.

The business components of both the Armey-Shelby flat tax and the Nunn-Domenici USA tax are in the form of a subtraction-method VAT, under which all purchases of goods and services by firms are deductible, including capital expenditures.[4] If the capital investments generate income that earns a normal rate of return, this income is tax-free under a subtraction-method VAT[5] but taxed under the current system. Income exceeding normal returns is taxed in the economic sense under a subtraction-method VAT, since the present value of this income stream exceeds the original cost of the equipment, and it is also taxed under an ideal income tax.

Under the various consumption-tax proposals, capital would have a tendency to move from the nontraded sectors to traded sectors. The principal tax-favored sectors in the current tax system–owner-occupied housing and State and local government–produce goods and services that are not traded internationally. It is unclear whether this would have a differential effect on exports versus imports, both of which are by definition traded.

[3] Current favorable tax treatment of retirement assets, inlcuding IRAs, Keogh plans, variable annuities, and 401(k) plans, has the effect of treating a large share of savings under the status quo in the same manner as they would be under a consumption tax (Engen and Gale 1997). Thus, the negative impact of the current system of taxation on saving is less than one might at first suppose.

[4] The business taxes in both the Armey-Shelby flat tax and the Nunn-Domenici USA tax plans also permit deductibility of wage expenses, and each imposes a separate wage tax on households. The deductibility of wages in these plans differs from that of a VAT. The Gibbons VAT proposal, which would include wages in business value-added while imposing no household wage tax, is closer to the idea of a pure VAT.

[5] If capital earns a normal rate of return, then the present value of the taxable income generated by a given piece of capital equipment equals the tax deduction obtained when the equipment is purchased, and thus the net present value of the tax burden associated with installing and operating the equipment is zero.

Finally, since current rules for taxable depreciation permit some types of capital equipment to be depreciated more rapidly than their true economic depreciation, and other types of equipment less rapidly, the status quo also distorts the incentives to invest in various types of capital equipment. This favors capital accumulation in some industries over others on the basis of tax rules alone. These distortions would be eliminated under proposed fundamental consumption tax reforms.

International Capital Market

This section considers some of the consequences on international capital movements of a consumption tax. Capital may flow across international borders in one of two ways — either through international purchases and sales of securities, under which the holder has no operating control (portfolio investment), or through establishment or acquisition of foreign affiliates by multinational firms, with the intent of exercising managerial control (direct investment). This section also discusses the ways in which foreign portfolio investment and foreign direct investment (FDI) may respond to the imposition of a consumption tax or influence its economic effects. This section employs both economic reasoning and numerical results of simulation modeling of a consumption tax. The relationship between international trade and FDI is considered, as well as the ways in which a shift to a consumption-based tax regime might influence the international location of R&D, the location at which intangible assets are deployed by firms, and firms' decisions concerning profit repatriation and corporate finance.

Portfolio Investment

From the standpoint of analysis, the simplest situation is one in which only one form of international investment is available, portfolio investment in bonds, and no restrictions exist on the mobility of financial capital. In such a situation, rational investors seek the highest possible risk-adjusted after-tax rate of return.[6] Capital flows from countries with low after-tax interest rates, where capital is in excess supply, to countries with high after-tax interest rates, where capital is in excess demand. If capital markets are perfectly integrated, these flows would equalize the risk-adjusted after-tax rate of return, and countries with higher taxes on interest income would have higher before-tax interest rates.

If the United States were to adopt a consumption-based tax system under this simplistic scenario, levels of U.S. investment and capital formation would exceed those that would prevail in the absence of international capital mobility. With only a consumption tax, the tax rate on interest income would effectively become zero, and the after-tax interest rate would equal the before-tax interest rate. Initially, before any international flow of capital occurs, the after-tax rate of return on U.S. bonds would rise, making them more attractive to U.S. investors.[7] Capital would then flow from other countries into the United States, until the U.S. after-tax rate of return fell to the foreign level. This inflow of foreign capital to the United States would be added to any additional capital formation that U.S. residents undertook in response to changes in the system of taxation. Arguments along similar lines can be made for international investments in stocks, since the switch to a consumption tax would eliminate taxation of interest and capital gains in the United States.

As discussed in the section on domestic capital markets above, substantial movements in interest rates may occur under any of the proposed tax changes considered in this report, although analysts disagree as to whether the U.S. real interest rate would increase or decrease. In the presence of international capital mobility, any effect of tax reform on U.S. interest rates could be substantially smaller. However, evidence suggests that the U.S. capital market is less than perfectly integrated with international capital markets, making it more likely that U.S. tax law changes could induce changes in the U.S. interest rate. First, evidence of a "home bias" in international capital markets has been uncovered by several authors, who report that investors are substantially less diversified than would be suggested by considerations of risk and rate of return alone.[8] Second, a series of studies beginning

[6] For the sake of brevity, in the following discussion interest rates and other rates of return on securities should be assumed to be risk-adjusted after-tax rates, adjusted for anticipated changes in exchange rates.

[7] Foreigners are not currently taxed by the United States on portfolio interest received from U.S. sources (Hines, 1996a, p. 475). Thus, the removal of taxation on portfolio interest affects only the incentives of investors resident in the United States.

[8] French and Poterba (1991) report that according to standard models of optimal portfolio allocation, a rational U.S. investor would hold between 45 and 47 percent of their portfolio in U.S. assets (depending on their degree of risk aversion). In fact, U.S. investors held over 90 percent of their portfolios in U.S. assets in 1990. Tesar and Werner (1992) report similar findings. Grauer and Hakansson

with Feldstein and Horioka (1980) and including a number of others reviewed by Frankel (1991) and Mussa and Goldstein (1993) have concluded that national savings and investment rates are highly correlated with each other. The finding that national investment depends primarily on national saving rather than on exports and imports of capital has been interpreted to mean that capital is relatively immobile internationally.[9]

Finally, tests of the uncovered interest parity hypothesis suggest that capital is less than fully mobile internationally. Under this hypothesis, the difference between domestic and foreign interest rates for bonds of the same maturity should be exactly offset by the amount of movement of the exchange rate investors expect between the present and the date of maturity of the particular bond. A number of researchers, beginning with Bilson (1981) and Fama (1984), have discovered that movements in exchange rates depart systematically and predictably from those predicted by uncovered interest parity. Some researchers have seen this result as evidence of international capital market inefficiency, while others have offered alternative explanations.

In summary, the capital market of the United States is heavily influenced by, but not perfectly integrated with, international capital markets. U.S. interest rate movements probably have a limited but not negligible autonomy from foreign interest rate movements. Thus, the interest rate effects of a consumption tax reform are likely to be modest once the degree of international integration of the U.S. capital market is taken into consideration.

[8]—*Continued*
(1987) calculate that the losses to U.S. investors from this lack of diversification are substantial.

[9] Alternately, national savings and investment may simultaneously be driven by some other attributes of countries, so that the observed correlation between savings and investment may not be particularly informative with respect to the degree of international capital mobility. Moreover, more recent attempts to replicate the Feldstein-Horioka result have found that a smaller share of national savings is retained domestically, so that international capital mobility has increased. For example, Feldstein and Horioka (1980) regress the investment-GDP ratio on the savings-GDP ratio and a constant for 16 OECD countries over 1960-74. Their estimates imply that for the average country in their sample, about 89 percent of domestic saving is retained as domestic investment. Feldstein and Bacchetta (1991) replicate this result for 22 OECD countries during 1982-91, finding that in the later period about 62 percent of domestic savings is retained as domestic investment.

Direct Investment

Investment Decisions of U.S. Firms

The replacement of the current system of U.S. Federal income taxation of multinational firms would likely increase the return on direct equity investments in the United States relative to the return on equity investments abroad, thus providing an incentive for firms to shift direct investment to the United States. While firms are likely to shift equity investments to the United States, under certain circumstances firms may also shift debt investments to their overseas affiliates.[10] This means that the net effect of capital movements related to direct investment on the total U.S. capital stock is uncertain, in general, the greater the drop in U.S. interest rates induced by tax reform, the larger the likely outflow of debt capital from the United States. If the change to a consumption tax induces only a small drop in interest rates, or if the change induces a rise in interest rates,[11] then on balance it is more likely that the capital transactions of U.S. multinational firms would induce a net increase in the U.S. capital stock.

While the current Federal tax system taxes worldwide profits of the multinational firm, with a credit for foreign taxes paid, a consumption tax would apply only to goods finally delivered to and sold in the United States. This, combined with the fact that both domestic- and foreign-source corporate income is free from tax under a consumption tax, might suggest that foreign direct investment is relatively favored on the margin. However, under a consumption tax, firms making capital expenditures in property, plant, and equipment receive tax deductions for those expenditures.[12] The ability of U.S. multinationals to expense these items fully means that for equivalent rates of consumption tax and income tax, a consumption tax favors investments made in the United States over those in foreign countries. Under the current Federal income tax regime, U.S. and foreign investments are equally attractive. Furthermore, introduction of a consumption tax would

[10] See also the discussion below entitled Net Effects of Equity/Debt Finance.

[11] A small drop in interest rates is likely if the U.S. capital market is relatively open to the world. On the other hand, a rise in interest rates is more likely if the Feldstein analysis is correct, and tax reform increases the demand for capital more than the supply.

[12] The base of a consumption tax from the point of view of a firm is the cost of goods sold less the cost of goods purchased.

cause firms to discriminate among foreign tax jurisdictions in favor of those with the lowest tax rates to a greater extent than under the status quo.[13]

To illustrate this point, consider the following examples, which are adapted from Grubert and Newlon (1995). Table 3-1 illustrates a U.S. income tax with a hypothetical rate of 25 percent under the current system, in which foreign taxes are credited against U.S. tax up to the maximum U.S. tax liability on foreign income. The foreign tax rate is assumed to be 10 percent in the "tax haven" jurisdiction and 40 percent in the "high tax" jurisdiction.[14] As table 3-1 illustrates, the current Federal income tax system with foreign tax credits seeks to avoid influencing investment decisions between equally productive domestic and foreign projects. This is referred to as "capital export neutrality." In the example, capital export neutrality is maintained between a domestic investment and an investment in a low-tax foreign jurisdiction, but tax rates in the higher-tax foreign jurisdiction effectively discourage investment there.[15] Nonetheless, the basic features of this example will suffice to show the basic changes in incentive between an income tax and a consumption tax.

Table 3-2 considers the same three investments under an origin-based consumption tax in the United States, with the same 25 percent rate as the income tax in table 3-1. Under an origin-based tax, such as the Armey-Shelby flat tax, no border tax adjustment is made for initially exported equipment. The consumption tax raises the rate of return on investment

[13] Under the status quo, foreign income taxes are credited against the U.S. corporate income tax up to an annual maximum of the firm's total U.S. tax liability on global income. This effectively means that firms are indifferent among foreign locations with different tax rates lower than the U.S. tax rate (e.g., 10 percent vs. 20 percent). Since adoption of a consumption tax would eliminate the current corporate income tax, the effects of the foreign tax credit would also disappear, and the difference among foreign income tax rates would become relevant in firms' decision making.

[14] The capital investment consists of a machine produced in the United States, which earns a 10 percent pre-tax rate of return regardless of where it is operated, and which yields its return in the form of consumable output. The machine may either be operated domestically or exported in order to establish a foreign affiliate. The high-tax foreign subsidiary and the low-tax foreign subsidiary should be thought of as belonging to two different domestic firms, so that excess tax credits in the low-tax foreign jurisdiction cannot be used to offset deficit tax credits in the high-tax foreign jurisdiction. Depreciation is also assumed to be zero or near zero in any given year, so that there are no income tax deductions involved with the use of the machine.

[15] The reality is not quite as simple as the example: firms can choose to defer indefinitely the repatriation of foreign profits, thus reducing the present value of their tax liability. Multinational firms with subsidiaries in both high- and low-tax foreign jurisdictions may apply the foreign tax credit against total U.S. tax liability on all foreign-source profits, which reduces the disincentive to invest in high-tax jurisdictions. In the example in table 3-1, if both the high-tax and low-tax foreign subsidiaries were operations of the same U.S. parent firm, total foreign-source profits would be 20, with a U.S. tax liability of 5. Since total foreign income taxes are also 5 (4+1), the foreign tax credit would effectively reduce the U.S. tax liability to zero. This would raise the after-tax rate of return in the low-tax foreign jurisdiction to 9 percent, exceeding the domestic rate of return, while the after-tax rate of return in the high-tax foreign jurisdiction would remain at 6 percent.

Table 3-1
Investment location decision factors under an income tax with foreign tax credit

	Cost calculations	Domestic	Foreign low-tax	Foreign high-tax
	(in dollars, except where noted)			
1.	Cost of machine	100.0	100.0	100.0
2.	Tax deduction for machine	0.0	0.0	0.0
3.	Net cost of machine (1) - (2)	100.0	100.0	100.0
4.	Net return before tax	10.0	10.0	10.0
5.	Foreign income tax	-	1.0	4.0
6.	Net return after foreign tax (4)-(5)	10.0	9.0	6.0
7.	Domestic tax liability	2.5	2.5	2.5
8.	Foreign tax credit	-	1.0	2.5
9.	Total domestic taxes paid (7) - (8)	2.5	1.5	0.0
10.	Total taxes paid (5) + (9)	2.5	2.5	4.0
11.	Net return after tax (4) - (10)	7.5	7.5	6.0
12.	Rate of return (11) ÷ (3) (percent)	7.5	7.5	6.0

Source: Grubert and Newlon (1995), adapted and extended by USITC staff.

Table 3-2
Investment location decision factors under an origin-based consumption tax

Cost calculations	Domestic	Foreign low-tax	Foreign high-tax
(in dollars, except where noted)			
1. Cost of machine	100.0	100	100
2. Tax deduction for machine	25.0	0	0
3. Net cost of machine (1)-(2)	75.0	100	100
4. Net return before tax	10.0	10	10
5. Foreign income tax	-	1	4
6. Net return after foreign tax (4)-(5)	10.0	9	6
7. Domestic tax liability	2.5	0	0
8. Foreign tax credit	-	-	-
9. Total domestic taxes paid (7) - (8)	2.5	0	0
10. Total taxes paid (5) + (9)	2.5	1	4
11. Net return after tax (4) - (10)	7.5	9	6
12. Rate of return (11) ÷ (3) (percent)	10.0	9	6

Source: Grubert and Newlon (1995), adapted and extended by USITC staff.

in both the United States and in the low-tax foreign jurisdiction, but by more in the United States. While investments in the low-tax foreign jurisdiction received the same rate of return as U.S. investments under the income tax, the U.S. investment receives an after-tax rate of return that is 1 percent higher under the consumption tax. The rate-of-return advantage of the United States over the high-tax foreign jurisdiction increases from 1.5 percent to 4 percent under the consumption tax reform, while the rate-of-return advantage of the low-tax foreign jurisdiction over the high-tax one increases by a smaller amount, from 1.5 percent to 3 percent. In summary, a shift to a consumption tax primarily encourages capital investment in the United States as opposed to any foreign location, and secondarily encourages investment in low-tax as opposed to high-tax foreign locations.

Similar effects occur whether the consumption tax envisioned is origin-based, as was the assumption in the example above, or destination-based (such as the Schaefer-Tauzin and Lugar sales taxes, or the Nunn-Domenici USA tax). Under the destination principle, the consumption tax is rebated at the border when goods are exported. This border adjustment drives a price wedge between identical goods sold in the United States and overseas, with goods sold in the foreign market being cheaper by a percentage equal to that of the consumption tax.[16] In table 3-2, this means that the foreign price of the machine would fall by the amount of the consumption tax which is rebated under the destination basis, from $100 to $75. The rebate of the tax is passed through to the foreign buyer. Since a similar wedge would be driven between the U.S. and foreign price of the machine's output, the pre-tax return on the machine would fall from $10 to $7.50. These price differences have an offsetting effect which leaves the rate of return on the investment the same regardless of whether the consumption tax is structured on an origin basis or a destination basis.

Several caveats apply to the above analysis. One is that the potential effect of consumption taxation in inducing firms to prefer low-tax foreign locations over high-tax foreign locations does not apply fully to most firms, depending on their tax situation under the status quo.[17] Also, the example assumes a consumption tax rate identical to the status quo income tax rate. In fact, a consumption tax designed to be revenue neutral relative to the income tax it replaces may well have a lower marginal rate. Six of the nine simulation studies reported in Joint Committee on Taxation (1997) provide their calculation of the long-run revenue-neutral tax rate under consumption tax reform.

[16] Grubert and Newlon (1995) explain this as follows: " . . . consider an export good that, under the origin-principle tax, sells for $1 in both locations. If the switch is made to the destination principle, and there are no price-level adjustments, equilibrium cannot be maintained, because a good that can be sold for $1 domestically garners $1 if exported plus a rebate of consumption tax equal to 25¢. To restore equilibrium, the relative foreign price level must fall so that a good selling for $1 domestically only gets 75¢ abroad. It is easy to show that the same argument holds for imports as well." They further note that the fall in the relative foreign price level would occur through some combination of changes in the exchange rate, the foreign price level, and the domestic price level.

[17] Under the status quo, firms with unusable excess foreign tax credits already face incentives to limit their activities in high-tax foreign jurisdictions. Also, U.S. firms which choose to reinvest the profits of foreign affiliates rather than repatriating them enjoy indefinite deferment of U.S. income tax liability on those profits under the status quo. Thus, for firms which reinvest, choices among foreign locations are also influenced by differences in foreign income taxes since this is effectively the final tax charged.

This rate varies between 14 percent and 25 percent, depending on the type of reform being considered (unified income tax or consumption tax), the structure and assumptions of particular models, and whether progressivity is provided by means of an exemption for individuals or firms with low incomes. If the tax is implemented with a single flat rate, the average and marginal rates would be equal. Under the status quo, marginal and average U.S. corporate income tax rates are 34 to 35 percent for most medium or large profitable firms.

The above simplified analysis suggests that the behavior of multinational firms would generally be identical under either origin-based or destination-based consumption taxes. In some circumstances, firm behavior might differ under the two tax regimes. Under a consumption tax, firm profits on investments earning a normal, or marginal, rate of return are effectively tax free while profits on investments earning an above-normal (or "inframarginal") rate of return are effectively taxed. When firms earn a normal rate of return, the present value of the tax deduction for purchased equipment just equals the present value of the tax liabilities on the future returns from that equipment. Conversely, if the firm earns an above-normal rate of return, the tax liabilities on the future returns exceed the value of the initial deduction.

Consider a typical situation, in which a foreign investment is established by exports of capital equipment from the United States, and the returns from the investment come in the form of goods that are imported into the United States. Under a destination-based system, the exported capital goods receive a rebate from consumption tax, but the imported goods are taxed at the border. The two border tax adjustments create an additional tax savings when the equipment is purchased, but an additional tax liability when the returns from the investment are imported, which just offsets the original savings. Thus, the firm's net tax situation for a foreign investment is identical to that for a domestic investment in this situation.

Under an origin-based system, exports increase taxable revenue while imports represent deductible expenses. Thus, the tax savings that occur at the time of the original installation of the equipment disappear, as does the tax liability on the future imports, which represent the profits from the investment. If the investment earns a normal rate of return, these two effects are exactly offsetting. This is not the case if the investment earns above-normal returns, which would be taxed on a domestic investment, but which would escape tax on foreign investment. Thus, under an origin-based consumption tax system, an incentive exists to locate projects with above-normal returns in low-tax foreign jurisdictions. As Grubert and Newlon (1997) note, the attractiveness of investment in low-tax foreign jurisdictions under an origin-based consumption tax is more likely to be present when the above-average return is due to some firm-specific asset such as unique technology or managerial know-how. Such incentives are less likely to be present when the above-average return is due solely to risk associated with the foreign location.

Under the present system, U.S. multinational firms have an incentive to defer repatriation of foreign-source profits to the United States. Such profits are generally not taxable until repatriated as dividends to the U.S. parent company,[18] giving firms an incentive to retain earnings in foreign affiliates which would not otherwise take place. A consumption tax does not tax capital income. This change would give multinational firms greater ability to reinvest profits earned in one part of the world elsewhere, based on economic rates of return, and in particular to reinvest profits earned by overseas affiliates in U.S. operations in response to investment opportunities.

Interactions Between Trade and Investment

If the consumption tax induces substantial shifts in direct investment, these would in turn induce shifts in merchandise trade. Direct investment may substitute for merchandise trade, e.g., in the case of FDI which takes place in order to serve a market protected by import restraints, or it may be complementary, as in the case of intrafirm trade. Markusen (1995) points out that about 30 percent of world trade is intrafirm trade, and concludes that on balance exports and overseas production tend to be complementary.[19]

In the case of a consumption tax, the trade effects arising from shifts in direct investment are even more likely to reflect complementarity between trade and FDI. Under the hypothesis that the behavior of direct investment would be driven primarily by tax-induced changes in international rates of return as discussed in

[18] There are some exceptions to this rule (Hines, 1996b). The profits of unincorporated foreign business (e.g., U.S.-owned branch banks overseas) are taxed immediately. Also, under the subpart F provisions of U.S. law, some types of foreign-source income are deemed "immediately distributed" and incur a tax liability. These include income from passive investment, income invested in U.S. property, money used offshore to insure U.S. risks, foreign base company income (which arises from using a foreign affiliate as a conduit for certain international transactions), and bribes to foreign government officials.

[19] For similar results see Blomström, Lipsey, and Kulchycky (1988) and Denekamp and Ferrantino (1990).

the section on direct investment below,[20] imposition of a consumption tax would reduce the level of U.S. direct investment abroad and increase the level of FDI in the United States. Consequently, trade flows associated with U.S. direct investment abroad would be expected to decrease on the margin, and trade flows associated with FDI in the United States would be expected to increase on the margin.

However, aggregate U.S. direct investment abroad would probably decrease by less than would be indicated simply by rate-of-return considerations, and could potentially increase. This is because total U.S. savings are likely to increase under a consumption tax, which is likely to stimulate all types of investment, both domestic and foreign. Conceivably, the increase in U.S. direct investment abroad induced by increased U.S. savings could offset the decline caused by relatively more favorable rates of return in the United States.

Table 3-3 contains data, compiled from Commerce Department sources (Zeile, 1997), that indicate the share of U.S. trade accounted for by the activity of multinational firms for 1994, the most recent year for which information on the trade of both U.S. and foreign multinational firms is readily available. Over 36 percent of U.S. exports and nearly 43 percent of U.S. imports were associated with the activities of multinational firms, dramatizing the potential importance of shifts in FDI for patterns of merchandise trade.

[20] This is a fairly restrictive hypothesis. Since fundamental tax reform would also change relative goods prices and the average rate of return in the United States, there are numerous general-equilibrium effects on direct investment that this hypothesis assumes negligible. Furthermore, the hypothesis also assumes that incentives for multinational firms to shift their pattern of debt issuance are insufficiently large to offset the effects pertaining to equity investment.

Impact on Foreign Firms Investing in the United States

The effects of moving to a consumption-based tax system on foreign firms considering direct investment in the United States vary according to the tax rules of the given foreign country. For countries that exempt foreign-source income from taxation (e.g., Australia, Canada, France, Germany, the Netherlands, and Switzerland) the increased incentives to invest in the United States are similar to those analyzed above for a U.S. multinational. Since such operations are taxed only by the United States, the increased rate of return made possible by the expensing of capital equipment under the consumption tax is the most relevant consideration. Other countries (e.g., Japan and the United Kingdom) have tax codes similar to the U.S. code, i.e., taxing foreign-source income but permitting a foreign tax credit. In this case, reduction in U.S. income taxes reduces the foreign tax credits earned by these firms, increasing non–U.S. tax revenues by the amount of the eliminated credit without changing incentives. But even for foreign-tax-credit countries, firms may experience some increased benefits of investing in the United States. For example, firms may simply defer the repatriation of U.S. income, reinvesting it in the United States. Also, the elimination of U.S. corporate income taxes may enable foreign-based firms to use excess tax credits accumulated in high-tax third countries to offset their own country's taxes on U.S.-source income, providing an additional incentive for investment in the United States.

Table 3-3
U.S. intrafirm trade associated with multinational firms, 1994

	U.S. Exports	U.S. Imports
	(in millions of dollars, or percent)	
Total	512,626	663,256
Between U.S. parent companies and their foreign affiliates	134,311	119,438
Percent of total	26.2	18.0
Between U.S. affiliates and their foreign parent groups	51,722	164,066
Percent of total	10.1	24.7
Total intrafirm trade	186,033	283,504
Percent of total	36.3	42.7

Source: U.S. Department of Commerce.

Analysts disagree as to whether U.S. consumption taxes are likely to be creditable against foreign income taxes.[21] The usual practice of foreign-tax-credit countries is to permit crediting only of taxes that "look like" income taxes. But since effective U.S. taxes on corporate income would be minimal in any event, there would be little U.S. tax to credit, and decisions about foreign creditability would probably not matter much (Grubert and Newlon 1995, Hines 1996a).

Location of R&D and Intangible Assets

Analysts generally agree that imposition of a consumption tax would modestly increase the incentives of multinational firms to locate R&D activities in the United States (Grubert and Newlon, 1995 and 1997; Hines 1996a). This, in turn, could increase U.S. productivity relative to foreign productivity. Research into international spillover effects of R&D suggests that while part of the benefits of R&D performed in one country spill over into other countries, a significant portion of the benefits are captured close to the physical location in which R&D takes place (Adams and Jaffe, 1996). In particular, U.S. firms capture a significant share of the worldwide returns from U.S.-based R&D activity (Eaton and Kortum, 1994).

Under current U.S. tax rules, firms are required to allocate a portion of R&D expense against foreign income. For firms that have excess foreign tax credits, foreign-source income bears no tax in any event, so the current rule effectively disallows some portion of R&D expenditures. Since income from foreign operations would no longer be taxed under a consumption tax, this allocation rule would no longer be operative. With R&D expenses becoming deductible under a consumption tax, there would then be an incentive to concentrate these deductions in the United States. Commerce Department data indicate that U.S. R&D performed by non-U.S. affiliates may have been in excess of $12 billion in 1993,[22] some of which was conducted by firms in an excess-tax-credit position. There would be incentives to bring some of this home under a consumption-based tax regime.

Grubert and Newlon (1995) note that under the status quo U.S. firms are permitted to fully expense R&D increase but only to depreciate physical capital; under a consumption tax system, both R&D expenses and physical capital purchases would be fully expensed. This implies that on the margin, U.S. firms facing a consumption tax would be likely to spend less on R&D and more on physical capital than under the status quo. The effects of such a change on business productivity are uncertain. Available research suggests that the returns on R&D generally exceed the returns on physical capital, with the social returns further exceeding the private returns due to spillover benefits of R&D expenditures. Equalizing the tax treatment of R&D and physical capital would tend to improve an individual firm's profitability. But from the standpoint of social welfare, equalizing the tax treatment of R&D and private capital could lead to an amount of U.S. R&D that is smaller than the social optimum.[23] Such a misallocation would occur if the current unequal treatment of R&D and physical capital in the tax code[24] is correct and approximately reflects the additional social returns of both.

Under the status quo, there is an incentive for U.S. firms with excess foreign tax credits to exploit abroad intangible assets, such as inventions which may incur intrafirm royalties or license fees. A royalty payment from the foreign subsidiary to the United States will usually be deductible in the foreign country, and therefore any existing excess tax credits can be used to eliminate U.S. tax liability on such a payment, thus escaping taxation altogether. Under a consumption-based tax system, the tax cost would be effectively neutral between U.S. and foreign locations for exploitation of an intangible asset, leading to some increased deployment of firm-specific technologies in the United States rather than abroad.

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[21] See Avi-Yonah (1996), Grubert and Newlon (1995) and McIntyre (1995) for a variety of views on the potential creditability of U.S. consumption taxes against foreign corporate income taxes.

[22] In 1989, the most recent year for which Commerce Department benchmark survey data on R&D are available, R&D performed by non-U.S. affiliates of U.S. multinational firms amounted to $7.9 billion, R&D performed for U.S. affiliates was $7.0 billion, and R&D performed both for and by U.S. affiliates was $6.3 billion. Revised 1993 estimates indicate that U.S. R&D performed for affiliates was $11.0 billion in that year, suggesting R&D by U.S. affiliates may be in excess of $12 billion. Of R&D performed for U.S. affiliates in 1993, about $7.5 billion (68.2 percent) took place in Europe, $1.0 billion (9.1 percent) in Canada, $880 million (8.0 percent) in Japan, and $1.1 billion (10.0 percent) elsewhere in Asia.

[23] This does not preclude the possibility that the current tax treatment of R&D may provide incentives to R&D which exceed those indicated by the extra social benefits of R&D spillovers, in which case equalizing tax treatment of R&D and physical capital could lead to greater efficiency from the social standpoint as well.

[24] Including the R&D tax credit, which is provided intermittently over time as tax law changes.

Net Effect on Equity/Debt Finance

The foregoing analysis of the incentives facing multinational firms essentially assumes that new capital will take the form of equity investment, i.e., the hypothetical machine in the examples above was assumed to be fully owned by the investor rather than financed by borrowed capital. In fact, the financial decisions of firms as to the international deployment of debt and equity would be influenced in different ways by a move to a consumption tax. For a pure consumption tax, whose base is goods sold minus goods purchased, taxation of interest income disappears simultaneously with deductibility of interest expenses. This would create an incentive for both U.S. and foreign multinationals to concentrate borrowing in their overseas affiliates, leading to a net outflow of debt capital from the United States. If debt capital is more mobile than equity capital, outflows of debt capital could exceed inflows of equity capital, possibly giving rise to a net long-run decline in the U.S. capital stock. Grubert and Mutti (1991) simulate the effect of "backward integration" of corporate and personal income taxes, which is similar to an income VAT in its treatment of capital income, and find that the U.S. capital stock could decline by as much as 5 percent in the long run. It should be pointed out that under the backwards integration proposal modeled in Grubert and Mutti (1994), the benefit of full expensing of capital purchases which would take place under a consumption tax did not apply, and so the offsetting equity inflows in response to this benefit were not reflected in the simulation.

Goods Market

Any tax system imposes distortions on the marketplace. Excise taxes, deductions, tax credits, and surcharges favor or tax certain kinds of production and consumption behavior relative to each other, and therefore alter market prices. Consumption taxes are no different. A move to a consumption tax will presumably remove (or substantially change) the present system and the activities it favors; it will also introduce, both in the short and long term, a new set of market distortions in goods markets. This section will examine the extent to which a consumption tax may change the price of imports relative to exports, capital goods compared to consumption goods, goods produced by capital-intensive processes relative to labor-intensive processes, and the difficult transitional problem of the value of "old" capital compared to "new" capital.

Imports and Exports

The various tax reform proposals differ in the type of border adjustments made for exports and imports. Consider a U.S. firm under the present system that imports some raw materials or equipment and exports a final product. Exports add to the firm's revenue and thus its profits, and so are taxable.[25] Imports add to the cost of production and are thus deductible. Under a pure consumption-based tax, imports, which are consumed here, are no longer deductible; while export income is no longer taxable since exports are consumed abroad.[26] Both the Schaefer-Tauzin and Lugar sales taxes and the Nunn-Domenici USA tax would remove the taxation of export receipts and the deductibility of import expenses. The Armey-Shelby flat tax would be similar to the status quo, with export receipts taxable and import expenses deductible.[27] Tax systems that tax traded goods according to where they are produced, like the existing system and the Armey-Shelby flat tax, are called origin-based systems, while systems that tax traded goods according to where they are consumed, like the Schaefer-Tauzin and Lugar sales taxes and the Nunn-Domenici USA tax, are called destination-based systems.

It has been widely claimed that the change from an origin-based system to a destination-based system would greatly encourage exports, reduce imports, and improve the U.S. trade balance. Since a destination-based tax exempts export revenues and removes deductibility of import expenses, this argument has intuitive appeal. However, several lines of economic reasoning have been advanced to suggest that the choice of basis would ultimately have little effect on trade. A destination-based consumption tax that levies a tax on imports has the appearance of a tariff, while the tax rebate on exports resembles an export subsidy. Thus it may seem that the tax would favor exports, but in fact the uniform application of a tax on imports equal to that faced by domestic producers, and a rebate of that tax on exports to countries not subject to the U.S. consumption tax is intended to maintain a level playing field between

[25] In some circumstances, it is possible to shelter export income from U.S. taxes. If firms have excess foreign tax credits, some of these may be utilized by treating up to half of export profits as having a foreign source. Also, use of a foreign sales corporation subsidiary may indefinitely defer U.S. tax on a portion of export profits.

[26] In practice, the exemption on exports would likely be implemented by imposing the consumption tax at the factory gate and rebating it at the border. This is similar to current administration of the European Union value-added tax.

[27] The Armey-Shelby flat tax consists of two separate taxes, one whose base is nonwage business value added and the other whose base is wage income; thus it is more of a modified VAT than a pure consumption tax.

domestic and foreign producers in domestic and foreign markets. Economists have long agreed that there should be no direct effect of such a consumption tax on imports and exports.[28]

The Joint Tax Committee (1995) provides a numerical example of this principle. Suppose that a product, such as steel, is produced both overseas and domestically for sale at $100 per unit. The enactment of a broad-based consumption tax with a tax rate of 10 percent raises the U.S. price of a unit of steel to $110, assuming the tax is passed forward to consumers. A border adjustment under the destination principle raises the price of the import to $110 as well, while the rebate of the tax for exports ensures that U.S.-produced steel could continue to sell for $100 in world markets. Thus a domestic or a foreign consumer's choice between the U.S. and foreign products would not be altered by a change in the price differential.

Finally, Hines (1996b) argues that exchange rates move to reflect international differences in goods prices. Thus any increase in export competitiveness caused by a move to destination basis would ultimately be offset by appreciation of the U.S. dollar. Another line of reasoning is that countries use receipts from exports either to import immediately, or to make investments abroad which ultimately provide income to pay for a larger volume of imports in the future. Both of these arguments are based upon the observation that strong economic forces keep a country's trade in approximate balance regardless of what other policy changes it may undergo. The likelihood that the change from an origin-based system to a destination-based system would in fact generate incentives to export and disincentives to import ultimately depends on the strength with which the long-run tendency toward balanced trade in fact operates. Grubert and Newlon (1995 and 1997) point out that a destination-based consumption tax does create an incentive for cross-border shopping, if goods can be reentered tax free, and for consumption abroad through travel or emigration. Finally, the ultimate effect of a flat consumption tax on the price of particular goods will depend on demand elasticities. Those goods for which demand is relatively inelastic may be able to pass through a larger price increase (tax inclusive) to purchasers than those with elastic demands.[29] Whether this would happen in specific cases would depend, among other things, on the price behavior of production inputs and competing products.

Capital-Intensive Products

To the extent that a consumption tax would stimulate capital formation in the United States, the relative price of goods produced by capital-intensive industries would decrease relative to the price of goods produced by labor-intensive industries. Moreover, corporate profits are taxed twice under the current system, both at the corporate level and at the personal level when distributed to stockholders through dividends. The repeal of this double taxation of capital income in the corporate sector would lower the price of goods produced in corporation-intensive industries relative to goods produced in noncorporation-intensive industries (Fullerton and Rogers, 1997).[30] These price changes would affect both traded and nontraded goods, with consequences for U.S. trade patterns. For example, petroleum refining and tobacco are both capital-intensive and corporate-intensive, and would tend to experience falling prices and to become more internationally competitive under the above reasoning. Finance and insurance are both labor-intensive and noncorporate-intensive and would tend to experience higher prices and to become less internationally competitive under the same reasoning. Finally, the elimination of the tax deduction for mortgage interest would increase the cost of home ownership, and would thus tend to have an adverse effect on the housing industry (Hall, 1996; Grubert and Newlon 1997).

[28] See Feldstein and Krugman (1990) and McLure (1987) for a more detailed treatment of this argument. Hufbauer (1987) repeats the argument, stating that the balance of trade does not in principle depend on whether a consumption tax is adjusted at the border, but may depend on whether its substitution for a corporate income tax increases corporate profitability. Aaron (1987) strongly ratifies this position: "By itself, imposing a VAT will have no effect *through the current account* on competitive advantage."

[29] In a statement submitted to the Commission for this investigation (March 19, 1998), the Luggage and Leather Goods Manufacturers of America express concern that sales of leather goods "... are particularly sensitive to changes in price because they are comparatively *discretionary*, meaning that these purchases are normally made after food, housing, and other more necessary items are purchased."

[30] The Fullerton and Rogers model differentiates between industries with different capital/labor ratios and different corporate/noncorporate production intensities. Among those with the highest capital/labor ratios are real estate, agriculture, petroleum refining, crude petroleum and natural gas extraction, and the transport, communications, and utilities sectors. Among those with the lowest ratios are services, construction, textiles, apparel, leather, lumber, furniture, stone, clay, glass, and the finance and insurance sector. Those industrial sectors whose production is most predominantly corporate in structure are motor vehicles, petroleum refining, chemicals and rubber, metals and machinery, and food and tobacco. Those least corporate are agriculture, finance and insurance, services, construction, and wholesale and retail trade.

Old and New Capital

As previously mentioned, owner-occupied housing will lose its preferential treatment, while investment in general will be more attractive. Thus there will be incentives to substitute demand from consumption to investment goods and from housing to other forms of investment. As a result, at least in the short run, there will also be upward pressure on the prices of investment goods (other than housing) relative to the prices of consumption goods (and housing). Further, the value of existing capital goods will decline relative to that of new goods since "new assets receive larger tax deductions than old assets do," (Auerbach, 1996).

The pricing of existing capital assets has important distributional implications. Unless transitional rules adjust for it, the introduction of a consumption tax will result in an increase in the tax on the returns on existing assets (since their purchase will not have been deductible), and thus a windfall loss to holders of these assets; although, some have argued that this problem could be ameliorated by appropriate transition relief. Besides the effects caused by the treatment of unamortized business assets, a consumption tax will cause a windfall loss to holders of assets receiving preferential tax treatment, such as housing (Joint Tax Committee, 1995, p.85). The international implications of this are likely to be negligible, however, and confined to the reallocation of investment funds.

Transactions Costs, Enforcement, and Miscellaneous Issues

This section analyzes the effects of moving to a consumption tax that have important consequences for international economic transactions, or are importantly influenced by the international economy, but are not discussed in the sections on goods or capital markets. The consequences of a consumption tax for transactions and enforcement costs of both firms and the government, transitional effects of the move from the status quo to a consumption tax, and the international implications of the transition are discussed. Finally, the potential reaction of foreign governments to a U.S. decision to replace income taxation with consumption taxation is analyzed.

An important point to bear in mind while reading the subsequent analysis is that the increased attractiveness to multinational firms of operating under a new U.S. tax code manifests itself through both real and artificial effects. Discussions of the possibility that a move to a consumption tax would increase the status of the United States as a tax haven often tend to blur the distinction between these effects. As discussed in the analysis of the international capital market, a move to a consumption tax would increase the after-tax rate of return in the United States relative to foreign countries, increasing firms' incentives to choose the United States as a location for new capital investment. But firms would also have incentives to report a greater share of worldwide profits already earned in the United States for purposes of tax avoidance. The real effects on investment location and the artificial incentives relating to tax avoidance appear similar, but they operate through different channels and have different consequences. In particular, consequences of tax changes for employment and productivity operate primarily through real changes in the capital stock, while both real changes and tax-avoidance behavior can affect government revenue collections in the United States and in foreign countries.

Transactions Costs and Enforcement

A move to a consumption tax could substantially simplify the existing tax system. If consumption taxation takes a form substantially simpler than the system if replaces, then reductions in compliance and enforcement costs could occur and would likely result in efficiency gains for the U.S. economy. Much of the current complexity and administrative cost of the present tax system arises from the measurement and detection of capital income, which is significantly more complex (for example, the accounting rules pertaining to depreciation) than the measurement of wage income. Further complexities arise from the rules pertaining to U.S. taxation of multinational firms, such as the allocation of interest and R&D expenses between domestic and foreign operations, and the foreign tax credit. These rules are substantially more complex in practice than the simplified presentation of them in the section on the international capital market. For example, nine separate foreign-tax-credit categories exist for different types of foreign income, as do rules to establish the character of income that is passed through different tiers of foreign subsidiaries, and rules to prevent the transfer of profits from high-tax to low-tax countries by concentrating borrowing in high-tax countries (Grubert and Newlon, 1995). A pure consumption tax, requiring measurement neither of capital income in general nor foreign-source capital income in particular, would remove the need for many of these rules, providing a substantial simplification of the tax code.

The monitoring and enforcement of transfer pricing rules is one of the most burdensome aspects of the current tax code. By using transfer pricing strategies, such as understating the cost of exports from high-tax countries and overstating the cost of imports, firms can shift profits to lower-tax jurisdictions. The practical use of transfer pricing is limited both by IRS rules, which require firms to use prices of equivalent "arms' length" transactions when available, and by the desire of firms to keep books that do not deviate too far from true economic costs for internal monitoring and incentive purposes. Nonetheless, substantial scope for shifting of profits through transfer pricing exists under the status quo, and available evidence suggests that firms indeed take advantage of profitable transfer-pricing opportunities.[31]

Under a destination-based consumption tax, the need for U.S. authorities to monitor transfer pricing would disappear. Export sales are exempt from tax under the destination basis, while import purchases do not qualify for tax deductions; thus, manipulation of intrafirm prices for exports or imports does not affect the U.S. tax base. Under an origin-based consumption tax, which counts exports as increases in taxable revenue and provides deductions for import expenses, transfer-pricing issues would be similar to those under the status quo.

Similar considerations apply to the use of transfer pricing on international royalties and license fees. Because royalties and license fees constitute payments for intangible technology, it is more difficult for tax authorities to identify comparable prices for equivalent arms' length transactions than for merchandise trade, and thus easier for firms to use royalties and license fees to artificially shift income among jurisdictions. An origin-based consumption tax would leave intact incentives to shift income to low-tax foreign countries through, for example, underpayment of royalties from the foreign subsidiaries to the U.S. parent, while such incentives would be largely absent under a destination-based consumption tax.

Under either type of system, the more favorable tax treatment of U.S. business would mean that firms subject to foreign income taxation would have increased incentives to use transfer pricing to shift profits to the United States. Such transfer pricing would presumably become easier because of diminished monitoring by the U.S. Internal Revenue Service. This would primarily create a concern for foreign revenue authorities, since it would mean a diminution in the tax base for foreign-country income taxation.

Some new issues for tax enforcement may arise under a consumption tax. Grubert and Newlon (1997) describe several of these. Since sales receipts are taxable but interest receipts are not, there would be an incentive to reclassify part of the sales price of a consumption good as interest on an installment contract. Under an origin-based consumption tax, this incentive would exist for export sales as well. Since foreign buyers in an income-tax country will usually be able to deduct both sales price and interest, they would be indifferent as to how the U.S. seller chooses to classify these items. By a similar argument, U.S. importers under an origin-based tax would have incentives to reclassify interest payments associated with imports as part of the purchase price.

Other new enforcement issues would also arise relating to the proper identification of border transactions. For example, under a destination-based tax firms would have to distinguish between taxable domestic sales and exempt exports, and between deductible purchases from domestic suppliers and nondeductible imports. Potential tax-avoidance schemes could involve shipping goods from one U.S. port (and claiming the VAT rebate for exports) and landing them in another, declaring only at the time of the import that they are domestic-source goods (thus avoiding the import tax). Further difficulties could arise with international service transactions, particularly when services are provided partly in one country and partly in the other.

The degree of savings in compliance and enforcement costs in any fundamental tax reform would vary with the provisions of the particular proposal under consideration (Slemrod, 1996). For example, the Armey-Shelby flat tax and the USA tax would require the filing of individual returns, while the Schaefer-Tauzin NRST and the Lugar sales tax would not. The provision of transition rules to increase the perceived fairness of the tax also increases complexity and reduces any advantage in compliance and enforcement costs. In Europe, where VATs often have multiple rates and other complexities, there appears to be little savings in collections costs. For example, in Britain, collection costs were 4.9 percent of revenue for the personal income tax and 4.7 percent for the VAT; while in Sweden collection costs for the VAT, at 3.1 percent of revenue, exceeded those of the Swedish income tax at 2.7 percent. In both countries, taxpayer costs exceeded administrative costs for both taxes, with the VAT having lower administrative costs and higher

[31] For further discussion, see studies summarized in table 4 in Hines (1996b).

taxpayer costs than the income tax in both countries (Malmer, 1995).

Recent estimates of the annual compliance costs of the U.S. income tax system range from $26 to $57 billion for individual filers and $20 to $102 billion for business filers. These estimates include the value of individuals' time used as well as monetary costs. Using a "best guess" of $50 billion for compliance costs of individuals and $20 billion for compliance costs of businesses, Slemrod (1996) speculates that total compliance costs of a flat tax without additional transition costs might be around $35 billion, or half the current costs of $70 billion. Under this estimate, business compliance costs would fall by one-third and personal compliance costs would fall by 70 percent relative to the status quo.

Transition Issues

The adoption of any tax reform will create windfall gains for some individuals and windfall losses for others, and these gains and losses give rise to concerns about fairness. These concerns are particularly intense when the existing tax code has been in place for an extended period of time and the reform is not expected. A frequent response to these fairness concerns is to include transition rules in a tax reform to mitigate the impact on windfall losers. Such transition rules tend to be complex, reducing the benefits from simplification and possibly slowing down any efficiency-enhancing changes in individual and business decision making, which the tax reform was designed to induce.

The question of transitional issues has been analyzed in the context of a consumption tax (Sarkar and Zodrow, 1993; Pearlman, 1996). The costs of transition consist largely of a one-time drop in asset values for existing wealth, referred to in the literature as a "transition tax."[32] Since there is a substantial quantity of existing wealth in the United States, disproportionately held by the elderly, transitional effects could be substantial. Some examples of transitional costs of the switch from an income tax to a consumption tax are the following:

- While businesses would be able to deduct the full value of new equipment purchases, businesses with old equipment would lose any unused depreciation allowances. This would reduce the market value of old equipment, and of businesses that have heavily invested in such equipment, relative to new equipment and businesses that purchase relatively more new equipment.

- The government would experience a temporary revenue loss since deductions for equipment purchases would at first exceed deductions for depreciation on equipment. (In the long run, equipment purchases are roughly offset by depreciation allowances, so such revenue losses would be less of a concern).

- Under a consumption tax individuals would lose the value of deductions for mortgage interest, charitable contributions, and other current income tax deductions. The loss of the mortgage interest deduction would cause a decline in the value of the existing housing stock, as well as reducing incentives to invest in new housing relative to fixed business assets.

- Individuals who have saved out of after-income-tax income during their working lives, and who retire at the moment of transition, would then pay a consumption tax on the withdrawals from savings used for consumption. This may be perceived as an inequitable form of "double taxation." Furthermore, under the status quo both individuals who sell assets to consume during retirement and firms who sell assets in order to reinvest elsewhere are able to shield from tax that portion of the value of those assets that represents their preexisting basis, or acquisition cost. The ability to deduct the preexisting basis of old assets would also disappear under a sudden shift to the consumption tax.

Simulation experiments with transition relief in the context of either a flat tax or a consumption tax find that such relief tends to delay, and in some models to reduce in the long run, the benefits of the tax reform in terms of real GDP and capital accumulation (Joint Committee on Taxation, 1997).

One important issue is the distribution of any "transition tax" between U.S. and foreign asset holders. The share of the transition tax borne by foreigners depends on whether the tax is on an origin or destination basis (Grubert and Newlon, 1997). Under a destination-based tax, the ultimate incidence of the tax falls on U.S. consumption. Since foreigners' return on

[32] Use of the term "transition tax" to refer to the drop in asset values of pre-existing wealth resulting from a consumption tax should not be taken to imply the imposition of a new revenue-generating levy, but instead refers to the market effects of switching from income to consumption taxation.

assets in the United States is ultimately paid in U.S. exports,[33] on which consumption tax is rebated at the border, foreign investors escape the burden of a domestic consumption tax. For a U.S. investor in foreign assets, the return on those assets (ultimately paid out in U.S. imports) is taxed at the border, thus U.S. investors who continue to consume in the United States bear the full burden of a destination-based consumption tax.

Under an origin-based consumption tax, the situation is reversed. The U.S. imports that represent the return on U.S.-held assets abroad are free from tax, while the U.S. exports which represent the ultimate return on foreign-held assets in the United States receive no rebate from tax. Thus, foreign holders of U.S. assets would bear transition taxes while U.S. holders of foreign assets would not, again assuming that all asset holders consume in their own country.

An origin-based consumption tax thus shifts a larger part of any transition burden to foreigners. In the absence of transition rules, the "one-time wealth tax" on foreign assets held in the United States would constitute a lump-sum transfer from foreigners to the United States. This may be viewed as an advantage of the lump-sum tax from the point of view of the United States, but only under the assumption that foreign governments would not react to tax reform in the United States by altering their own tax codes. The consequences of relaxing this assumption will be examined in the following section.

Foreign Government Reactions

The effects of a change to the U.S. tax system depend on possible changes in foreign tax policies. The international effects of U.S. tax law changes depend on the level of foreign rates as well. In particular, if the introduction of a consumption tax in the United States resulted in significant shifts of capital from foreign markets to the U.S. market, it is plausible that foreign governments might alter their own systems of taxation in order to recapture some of this capital.[34] Foreign tax changes, which might take place as a reaction to U.S. tax reform, would then modify the expected effects of U.S. tax reform. The reaction of foreign governments, though potentially significant, is particularly difficult to forecast.

Under one scenario, U.S. adoption of a consumption tax would, by enhancing the status of the United States as an international tax haven, upset the current balance of the international division of tax revenue as well as the system of tax law treaties between the United States and other countries (Avi-Yonah, 1996). As a broad generalization, under current arrangements active business income (such as profits of multinational corporations) tends to be primarily taxed in the country where the income is generated, while passive income from portfolio investments is taxed in the country of residence of the ultimate recipient of the income; in each case the second country holds the right to tax any residual income untaxed by the first country. Withholding taxes on portfolio income in the source country facilitate taxation of that income by the country of residence of the asset holder, by making the income easier to trace.

The United States, which does not impose withholding taxes on portfolio interest, would give up withholding taxes on dividends, royalties, and other portfolio income under a consumption tax. This change would further frustrate the attempts of other governments to trace this income. In addition, a move to a consumption tax would increase incentives for firms to shift profits to the United States by means of transfer pricing while simultaneously reducing U.S. Treasury incentives to monitor transfer pricing. This would increase the difficulties that foreign governments would face in protecting their own tax bases from erosion by transfer pricing.

Possible foreign reactions to U.S. adoption of a consumption tax may take two forms. The first is to shift to a consumption tax as well, thus mitigating the tensions that take place when a multinational firm operates in a consumption-tax country and an income-tax country simultaneously. As noted in chapter 1, many countries have adopted consumption taxes while retaining income taxes, and may find such a shift politically difficult. The second option is to attempt to capture the tax revenue on multinational firms which would be unilaterally foregone by the United States, by extending worldwide taxation of their resident multinational corporations to capture U.S.-source profits.

Grubert and Newlon (1995) argue that more countries will adopt consumption taxation. This would tend to increase global efficiency unless other countries adopt new, more distortionary taxes (such as excise

[33] Either immediately (if the project produces goods that are exported to the foreign home market or third markets) or eventually (if the profits from U.S.-located assets result in an accumulation of foreign claims on the United States).

[34] Hines (1996a) notes that many countries reduced tax rates and broadened tax bases at about the time that the United States enacted the Tax Reform Act of 1986. In his view, these changes reflected an international consensus on appropriate principles of tax reform as much as, and perhaps more than, a particular strategic reaction to U.S. tax law changes.

taxes on single commodities, or import tariffs) to capture revenue that might be lost by a move to a consumption tax.

The United States currently has bilateral tax treaties with more than 40 countries. These treaties substantially reduce or eliminate withholding taxes on payments of dividends, nonportfolio interest, and royalties to foreigners. In the absence of the treaty, the U.S. statutory withholding rate of 30 percent on such payments to foreigners would apply. Most provisions of these treaties specifically reference income taxes. The United States would be unilaterally eliminating its income tax if a consumption tax were adopted.

In this case, foreign governments may have an incentive to retain tax treaties with the United States in order to benefit from the nondiscrimination provisions of those treaties. Under these provisions, signatories commit not to impose taxes on foreigners that are higher than those on their own residents. Under the status quo, withholding taxes on payments to foreigners are considered nondiscriminatory, but if the income tax were abolished, they might not be.[35] Thus, if the treaty is retained after the income tax is abolished, the nondiscrimination provision would reduce the rate on foreign withholding to zero, while if it is abolished, the rate would climb to 30 percent.

However, as Avi-Yonah (1996) points out, the general tendency of the consumption tax is to attract internationally mobile capital to the United States, which presumably would be unwelcome by foreign governments. Abrogating tax treaties, thus permitting U.S. withholding rates on foreign income to rise, could be an effective way for some foreign governments to counteract the tax advantages of the United States as an investment location which would be induced by a move to a consumption tax.

Empirical and Simulation Evidence

Empirical Evidence on the Tax Sensitivity of FDI

Hines (1996b) reviews extensive evidence on the sensitivity of the behavior of multinational firms with respect to tax rates. Studies vary in the concept of FDI used (total foreign capital stock, annual investment), the measure of the tax regimes (the tax rate itself, or after-tax returns), and other features of research design (e.g., cross-section vs. time-series analysis). Broadly, most studies find that both U.S. direct investment abroad and foreign direct investment in the United States are responsive to differences in taxation:

- U.S. direct investment abroad is greater in countries for which the after-tax rate of foreign returns is high relative to the U.S. after-tax rate of return on comparable investment. This means that U.S. direct investment abroad is attracted to countries with low tax rates, other things being equal. Firms respond to differences in the after-tax cost of capital in different countries in a similar fashion, preferring to invest in places where the after-tax cost of capital is lower.[36]

- Similarly, foreign direct investment in the United States is responsive to tax rates, and increases with a higher after-tax return to investment. Countries with higher tax rates are more likely to invest in the United States, other things being equal. Foreigners prefer to invest in U.S. locations with lower tax rates, particularly if their home governments do not offer foreign tax credits.[37]

Results from Simulation Modeling

In January 1997, the Joint Committee on Taxation (JCT) convened a symposium on the macroeconomic effects of tax policy (Joint Committee on Taxation, 1997).[38] The focus of this symposium was modeling of the macroeconomic effects of tax policy. Nine models were presented,[39] which were used to analyze

[35] Withholding taxes on payments to foreigners are considered to be in lieu of the income tax payment that would fall on resident recipients.

[36] See in particular, Grubert and Mutti (1991), Hines and Rice (1994), Hartman (1981), Boskin and Gale (1987), Cummins and Hubbard (1995), Harris (1993), Grubert and Slemrod (1994), and Bond (1981).

[37] See Newlon (1987), Young (1988), Boskin and Gale (1987),Ondrich and Wasylenko (1993), and Hines (1996c).

[38] Results from several of the models presented at this symposium were also presented during symposia on fundamental tax reform sponsored by the American Economic Association in January 1997 (Engen and Gale, 1997; Fullerton and Rogers, 1997; Jorgenson and Wilcoxen , 1997).

[39] The nine models, and their presenters at the JCT conference, were as follows: the Fullerton-Rogers model (Diane Lim Rogers), the Auerbach-Kotlikoff-Smetters-Walliser model (Kent Smetters and Jan Walliser), the Engen-Gale model (Eric Engen), the Gravelle model (Jane Gravelle), the Fiscal Associates, Inc. model (Gary Robbins), the Jorgenson-Wilcoxen model (Peter Wilcoxen), the Macroeconomic Advisers, LLC model (Joel Prakken), the DRI/McGraw Hill, Inc. model (Roger Brinner), and the Coopers & Lybrand, LLC model (John Wilkins).

two generic proposals to restructure the U.S. income tax system: a broad-based unified income tax, and a broad-based consumption tax. The JCT staff provided a common framework for characterizing the reform proposals, as well as a set of common assumptions about future Federal, State and local government spending, monetary policy, and government deficits.

With respect to domestic capital markets, the participants and their model results agree that the effect of a consumption-based tax will be to increase the capital stock over the long run. Estimates of the size of the long-run effect vary from a low of 0.3 percent (the Jorgenson-Wilcoxon model) to a high of 31.5 percent (Auerbach, Kotlikoff, Smetters, and Walliser). The long-run effect on the savings rate varies from a low of -1.0 percent (the only model that yielded an estimated decrease in the savings rate) by Jorgenson and Wilcoxon to a 1.4 percent increase estimated by Auerbach and colleagues.

In only three models was it possible to analyze directly the effects of international capital mobility on the outcomes arising from fundamental tax reform. This was not possible in the other models, which either assumed that the U.S. economy was closed to all international transactions, or that international capital flows were fixed in their annual amount. As shown in table 3-4, two of the three models for which experiments on international capital flows were undertaken estimated substantially greater gains from fundamental tax reform in scenarios for which international capital flows took place than for scenarios in which such flows were assumed not to take place. One model estimated smaller gains for tax reform in the presence of international capital flows.

Even in the models for which international capital flows are explicitly considered, these flows are treated in a fairly simplistic manner. None of the models used in the JCT symposium contain a realistic representation of direct investment. They rely on radical simplification of the complex manner in which the earnings of multinational corporations are taxed under the status quo, and do not model at all foreign countries' taxation of these firms. Thus, many of the possible effects alluded to in the earlier part of this chapter are not captured by these models. For example, Gravelle and Engen-Gale assume that capital flows adjust to equalize worldwide rates of return. This assumption amounts to modeling international capital flows as taking place in a perfectly frictionless bond market. The Robbins model makes a less standard assumption that capital flows adjust to return the economy to its pre-policy after-tax rate of return. This assumption likely explains why that model obtains substantially greater results for the impact of international capital flows. These caveats notwithstanding, the results of the various simulations suggest that the effects of international capital markets would substantially alter assessments of the impact of fundamental tax reform on the U.S. economy.

Table 3-4
The long-run impact of international capital flows on the estimated effect of fundamental tax reform

	Type of tax modeled (and model author)		
	Consumption tax (Gravelle, 1997)	**Consumption tax (Engen-Gale, 1997)**	**Unified income tax (Robbins, 1997)**
(Percent difference from current tax code baseline)			
Real GDP			
No international capital flows	3.7	2.4	6.7
International capital flows	2.4	3.5	15.4
Capital Stock			
No international capital flows	11.2	9.8	7.9
International capital flows	6.9	15.1	28.3
Labor Supply			
No international capital flows	0.3	0.1	2.3
International capital flows	0.2	0.1	4.3

Note.—For the Robbins model, the estimate for 2010 is taken as the long-run estimate.

Source: Joint Committee on Taxation (1997). "Gravelle" refers to Jane G. Gravelle, "Simulation of Economic Effects for Flat Rate Income and Consumption Tax Proposals," "Engen/Gale" to Eric Engen and William Gale, "Macroeconomic Effects of Fundamental Tax Reform: Simulations With a Stochastic Life-Cycle, Overlapping Generations, General Equilibrium Model," and "Robbins" to Gary and Aldona Robbins, "Tax Reform Simulations Using the Fiscal Associates' General Equilibrium Model," all in the above-cited volume.

Another simulation study by Mendoza and Tesar (1998) also suggests that benefits of a transition to a consumption tax would be substantially larger in an open-economy context. The authors estimate that replacing the capital income tax with a consumption tax would increase U.S. economic welfare by 2.9 percent in the long run, as opposed to only 2.1 percent in a closed economy. In addition, replacing the labor income tax with a consumption tax would increase U.S. welfare by 3.5 percent in the long run in an open-economy scenario as opposed to 3.1 percent in a closed-economy scenario. These welfare estimates include both transitional costs and steady-state gains. The difference between closed-economy and open-economy welfare is primarily due to purchasing power that is transferred from foreign countries to the United States due to increased U.S. borrowing during the transition period. In a closed economy, the new capital formation induced by a consumption tax would be financed entirely by household sacrifices of consumption and leisure, whereas with international capital markets some of these costs can be alleviated by temporary U.S. borrowing in foreign markets. This borrowing would be compensated for by larger U.S. trade surpluses in the long run. Thus, the presence of international capital markets tends to reduce the undesirable effects of a swift transition to consumption taxes.

CHAPTER 4
Implications for U.S. Trade and Competitiveness

This chapter summarizes the overall implications for U.S. trade and competitiveness that can be drawn from the literature survey in the previous chapter. The international effects of the United States' adopting a broad-based consumption tax are highly complex and not easily estimated. No comprehensive studies of the effects of moving to a consumption-tax regime on trade and competitiveness are currently available. The complexity of analyzing this issue arises from the fact that a consumption tax will affect the U.S. trade balance through multiple, interrelated channels. These channels include domestic capital markets, international capital markets, goods markets, and compliance and transition costs. In all cases, these market factors interact with one another, and in some instances, the interactions may be offsetting. Therefore, the potential net effects to U.S. trade and competitiveness are ambiguous in some areas. The discussion that follows focuses on three topics: (1) the difference between the effects of the various proposals, (2) the overall net effects on trade and competitiveness of adopting a broad-based consumption tax, and (3) the limitations of the existing literature on these topics.

Differences Between the Proposals

One of the more important topics of this analytical survey has been to explain how the various specific tax proposals are related and whether they will have different economic effects on trade and competitiveness. In brief, all the proposals are likely to increase the total U.S. capital stock, gross domestic product (GDP), and wages. It is fairly likely that a significant part of this capital stock increase would arise from inflows of international capital into the United States.

As noted in chapter 2, each of the four proposals focuses on income or consumption that takes place in the United States. To quickly summarize, the Armey-Shelby flat tax and Gibbons value-added tax (VAT) are applied to income earned (other than capital income) in the United States. The Schaefer-Tauzin national retail sales tax (NRST) and the Lugar sales tax are based on individual consumption in the United States; and the Nunn-Domenici tax is based on individual consumption (income less new savings), plus the cash flow from U.S. business activities. While the flat tax and the unlimited savings allowance (USA) tax are formally based on the reporting and taxation of income, their intended base is consumption rather than income, since they exempt savings or the returns to savings.

One of the main distinctions of these proposals is the method in which U.S. exports and imports are taxed. The flat tax can be classified as an origin-based tax since export receipts are taxed and import receipts are deductible. The remaining proposals–the two sales taxes, the USA tax, and the VAT–are destination-based taxes since export receipts are untaxed and import receipts are nondeductible. In general, this difference can have important effects on U.S. trade and competitiveness.

As discussed in chapter 3, the adoption of a destination-based tax is not likely to encourage U.S. exports in the long run as its proponents claim. However, as chapter 3 discussed, the difference between origin–based and destination–based taxes does impact several other factors such as where multinational corporations (MNCs) choose to locate certain types of foreign direct investment (FDI), transfer pricing, and the incidence of transition costs. The effects of origin-based versus destination-based taxes on these factors are summarized in table 4-1.

The relative merits of an origin-based versus a destination-based tax are unclear. However, some analysts (e.g., Avi-Yonah, 1996) argue that there are significant advantages to a destination-based consumption tax from the point of view of international trade and investment. One advantage is that the destination-based tax avoids taxing capital income altogether. Under an origin-based tax, investments with an above average rate of return would be taxed on part of the value of the investment. This

Table 4-1
Difference of trade and competitiveness effects between an origin- and a destination-based tax

Market factors	Origin-based	Destination-based
Border adjustment effects on U.S. trade balance	U.S. trade balance is unaffected.	Possible short-run improvements to trade balance due to border adjustment; however, in the long run unaffected.
FDI projects with above average returns	Increased incentive for U.S. multinational corporations (MNCs) to locate in foreign tax havens. Similar incentives may occur for foreign MNCs from tax-credit countries if foreign governments do not permit credits for U.S. consumption taxes against their own income taxes.	Neutral with respect to location.
Transfer pricing and enforcement costs	Concerns that transfer pricing could be used for tax avoidance are the same as under the present system. In addition, there may be incentives for MNCs to manipulate interest payments on trade flows for tax avoidance.	Reduces need for U.S. Treasury to monitor transfer pricing. Foreign governments could experience revenue losses.
Transition costs	Transition costs fall more heavily on foreign asset holders.	Transition costs fall more heavily on domestic asset holders.

Source: Constructed by USITC staff.

means that under such a tax an incentive exists to locate such projects in foreign countries with low corporate tax rates, if the above average returns could also be earned abroad. It should be recognized that these incentives are similar to those of the present system and that under neither proposal would a sizable export of capital by U.S. multinational firms be expected.

A destination-based tax could have advantages in terms of compliance costs for private firms and enforcement costs for the U.S. Treasury. It would remove incentives to distort transfer pricing for tax avoidance. Current concerns about transfer pricing would remain under an origin-based tax, and new ones may emerge, such as the manipulation of interest payments associated with international trade for tax avoidance.

An origin-based tax has an advantage in shifting some of the transition burden of a consumption tax to foreign-based multinational firms. However, since most current U.S. wealth is held by U.S. citizens, most of the transition costs will fall on U.S. residents regardless of the choice of basis. Furthermore, if Congress chooses to mitigate the impact of transition costs by means of transition rules, gradually phasing out the current tax-favored treatment of some activities rather than eliminating them in a single move, then the allocation of transition burdens becomes less important. Ultimately, once a new tax system is fully in place, transition issues cease to be relevant.

Overall Trade and Competitiveness Effects

The results that can be inferred from the literature are quite ambiguous in some ways; however, the importance of international capital flows is clear. Specifically, the distinct effects of debt and equity flows into the United States are essential to consider. International capital effects, as well as transition effects, should be the primary focus of any future research that attempts to estimate the potential effects of a broad-based consumption tax to U.S. trade flows and competitiveness. Four essential points emerge from this survey:

- With respect to domestic capital effects, most studies seem to conclude that a change to a consumption-based tax system could significantly increase domestic savings and equity investment, with a corresponding positive impact on U.S. GDP and wage rates. The net effects on domestic interest rates are ambiguous.

- With respect to international capital effects, adopting a consumption tax could attract foreign equity capital to the United States, as well as encourage U.S. firms to locate projects in the United States that might otherwise have gone abroad. However, it will also encourage U.S. MNCs to shift debt capital to other countries. While the net effect of these flows on the U.S. capital stock is at the theoretical level ambiguous, the overall consensus is that net capital inflows are more likely.

- With respect to goods markets, border adjustments tied to a destination-based consumption tax are unlikely to have a long-run effect on the U.S. trade balance. Such adjustments could induce a short-run move toward surplus in the U.S. trade balance, which would ultimately be offset by a real appreciation of the U.S. dollar. One potential effect is that the composition of U.S. trade will change. U.S. net exports of capital-intensive goods will increase, while net exports of labor-intensive goods will likely continue to decrease.

- If consumption taxation takes a form substantially simpler then the system it replaces, reductions in compliance and enforcements costs could result. In addition, adopting a consumption-based tax could enhance the status of the United States as a tax haven. However, adopting a consumption tax would induce a one-time drop in asset values of pre-existing wealth, which may be perceived as inequitable. This problem could be ameliorated by appropriate transition relief. (The distribution of falling asset values between U.S. and foreign wealth holders depends on the way in which the consumption tax is structured.)

Table 4-2 provides a quick summary of these basic points, and shows how a tax change ultimately affects U.S. trade and competitiveness. Specifically, it identifies the primary market variables that are affected through each of the four market channels defined in chapter 3. In addition, it attempts to outline the basic market mechanism of the tax change, the net effect on the primary market variables, the explanatory market factors that determine the magnitude and direction of the net effects, and finally, the effects on U.S. trade and competitiveness.

Domestic Capital

The discussion of the effects to the domestic capital market focuses primarily on those changes that result from a change to U.S. levels of domestic savings and investment. For simplicity, similar effects that result from foreign capital flows into the United States are considered separately under the effects of the international capital market. The primary variables that are most likely to change in this market as the result of adopting a consumption tax are the U.S. levels of domestic savings and investment and U.S. interest rates. In addition, because it is ultimately driven by the domestic savings and investment balance, the U.S. trade balance will also be affected.

The increase in after-tax returns to savings and investment leads to an ambiguous increase in both the domestic demand for investment and the domestic supply of savings. With respect to competitiveness, domestic labor productivity generally increases as the domestic capital stock increases. In addition to increases in the overall levels of savings and investment, capital investment is likely to flow from nontraded to traded sectors within the U.S. economy, for example, from construction to manufacturing. This movement of capital occurs because the elimination of favored tax treatments of certain interest payments (primarily interest deductibility for housing and exemption from tax of interest on the obligations of State and local governments) increases the relative after-tax return of the traded sector.

However, the resulting changes to U.S. interest rates and the trade balance are ambiguous. Changes in U.S. interest rates and the U.S. trade balance will depend upon which of the two–domestic savings or investment–is more sensitive to tax changes. If savings increase faster (more slowly) than investment, then the U.S. trade balance moves towards surplus (deficit).

International Capital

In international capital markets, the primary variables most likely to be affected are the level of U.S. equity capital, (both general portfolio investment and direct investment conducted by multinational firms); the level of U.S. debt capital held by multinational firms; the location of R&D conducted by U.S.-based firms; and the U.S. trade balance. The after-tax return to capital in the United States relative to other countries should increase. The change would induce equity capital to flow into the United States; however, the deductibility of interest costs would be eliminated, which would increase the cost of U.S. debt capital relative to other countries. Current tax

Table 4-2
International implications of adopting a consumption tax in the United States

Market channel	Market variables primarily affected	Mechanism of tax-change effects	Factors determining the net effect	Effects on trade and competitiveness
Domestic Capital	(1) The U.S. domestic level of savings and investment; (2) U.S. interest rates; and (3) the U.S. trade balance which is ultimately driven by the domestic savings and investment balance.	The increase in the after-tax returns to savings and investment induces an increase in their levels. Elimination of interest deductibility for the nontraded sector increases the relative after-tax return of the traded sector.	Changes in U.S. interest rates and the U.S. trade balance will depend upon which of the two, domestic savings or investment, is more sensitive to tax changes.	Domestic savings and investment may increase. If savings increase faster (more slowly) than investment, then the U.S. trade balance moves toward surplus (deficit); domestic labor productivity generally increases as the domestic capital stock increases. Capital flows from nontraded to traded sectors; potential changes to net savings and investment are ambiguous.
International Capital (including R&D activity)	(1) The level of U.S. capital, both general portfolio and direct investment conducted by multinational firms; (2) the level of U.S. debt capital held by multinational firms; (3) the location of R&D conducted by U.S.-based firms; and (4) the U.S. trade balance.	The after-tax return to capital in the United States relative to other countries increases. Equity capital flows into the United States; however, the deductibility of interest costs is eliminated, increasing the cost of U.S. debt capital relative to other countries. Current tax incentives for U.S. firms to locate R&D abroad would be eliminated.	Overall net changes in the U.S. capital stock depend on which of the two capital flows, inflows of equity capital or outflows of debt capital, is more responsive to tax changes.	U.S. capital rises as equity capital flows into the United States. If net capital flows into the United States increase (decrease), then the U.S. trade balance moves toward deficit (surplus). While the net effect is theoretically ambiguous, the consensus is net inflows are likely. Domestic labor productivity generally increases as U.S. capital stocks increase. The relocation of R&D to the United States leads to improvements in overall U.S. productivity.
Goods Market	(1) Prices and quantities of U.S. exports and imports; (2) the short-term trade balance; (3) the price of capital-intensive goods relative to labor-intensive goods; and (4) the composition of U.S. trade among types of goods.	The switch to a destination-based tax would exempt export revenues and remove the deductibility of import expenses. An increase in the domestic capital stock will induce a fall in the price of capital-intensive goods relative to labor-intensive goods.	Changes in the trade pattern induced by changes in the relative prices of capital versus labor intensive goods depends on the sensitivity of wages and capital costs to tax changes.	The switch to a destination- based tax may improve the short-term trade balance. However, border price adjustments would likely not have a long-run effect on the trade balance. U.S. net exports of capital-intensive goods would increase. The long-run effect on the trade balance is ambiguous.
Compliance Costs, Enforcement, Transition Issues	(1) compliance and enforcement costs of the tax system; (2) the wealth of current U.S. asset holders; (3) tax incidence between foreign and domestic holders of U.S. assets; (4) foreign government revenues.	Reductions in compliance and enforcement costs would increase U.S. productivity and induce modest government budget savings. Current holders of U.S. assets have an implicit “transition tax” as the tax base changes from income to consumption.	Imposition of transition rules may reduce savings in compliance and enforcement costs. The incidence of the transition tax falls more on foreign (domestic) asset holders under an origin (destination) based tax.	If consumption taxation takes a form substantially simpler than the system it replaces, reductions in compliance and enforcement costs could occur and would likely result in efficiency gains for the U.S. economy. It may lead to a reduction in the wealth of current asset holders. Switch leads to enhanced status of the United States as a tax haven and thereby a reduction in foreign government revenue. Foreign government reactions to lost tax revenue are unclear.

incentives that may encourage some U.S. firms to locate R&D abroad would be eliminated.

The U.S. capital stock rises as equity capital — portfolio investment and FDI — flows into the United States. However, the increase in equity capital could be offset by the outflow of debt capital to other countries by multinational firms. While the net effect of these flows on the U.S. capital stock is ambiguous at the theoretical level, the overall thrust of both analytical reasoning and simulation modeling is that net capital inflows are more likely. R&D performed by U.S. firms in the United States would increase modestly. Overall net changes in the U.S. capital stock depend on which of the two capital flows, inflows of equity capital or outflows of debt capital, is more responsive to tax changes. If net capital flows into the United States increase (decrease), then the U.S. trade balance moves toward deficit (surplus); domestic labor productivity generally increases as U.S. capital stocks increase. The relocation of R&D to the United States leads to improvements in overall U.S. productivity — i.e., total factor productivity.

Goods Market

Potential effects of the proposed tax regime on exports and imports other than those resulting from changes in international capital flows are discussed here. The focus will be on the effects of border price adjustments and the effects on U.S. products as capital moves within the U.S. economy to more productive sectors. The primary variables affected will be prices and quantities of U.S. exports and imports, the short-term trade balance, the price of capital-intensive goods relative to labor-intensive goods, and the composition of U.S. trade.

The switch to a destination-based tax would exempt export revenues from tax and remove the deductibility of import expenses. Three of the tax proposals examined in this survey are destination-based taxes: the national sales tax, the USA tax, and the VAT. The current tax system and the flat tax are examples of origin-based taxes where export revenues are taxed and import expenditures are deductible. An increase in the domestic capital stock will induce a fall in the price of capital-intensive goods relative to labor-intensive goods. Because of the repeal of double taxation in the corporate sector, corporate-intensive goods (as opposed to goods produced primarily by single proprietorships or partnerships) would experience a similar decline in relative prices.

A destination-based tax could induce a move to surplus in the short-term trade balance; however, in the long run, relative price adjustments to equalize prices of foreign and domestically produced goods in world and U.S. markets, along with appreciation of the U.S. dollar, will offset these changes. Net exports of capital-intensive goods will increase relative to those of labor-intensive goods. The overall effect on the trade balance is ambiguous. Changes in the trade pattern induced by changes in the relative prices of capital- versus labor-intensive goods depend on the sensitivity of wages and capital costs to tax changes. Border price adjustments resulting from a destination-basis tax are not expected to have a long-run effect on the trade balance.

Transaction Costs and Other Issues

Under this category, the primary variables affected are the compliance and enforcement costs of the tax system, the wealth of current U.S. asset holders, the tax incidence between foreign and domestic holders of U.S. assets, and foreign government revenues. Significant reductions in compliance and enforcement costs, if they occur, would generally induce an increase in U.S. productivity and modest government budget savings. The switch to a consumption tax would enhance the status of the United States as a tax haven; however, this would also result in a reduction in foreign government revenues. Foreign government reactions to lost tax revenue are unclear.

In addition, current holders of U.S. assets would experience a one-time drop in asset values as the tax base changes from income to consumption, sometimes referred to as a “transition tax.” These detrimental effects could be ameliorated by the imposition of transition rules that reduce the transition tax. However, such rules would also reduce the savings in compliance and enforcement costs. The switch would also affect the incidence of the transition tax, which falls more heavily on foreign (domestic) asset holders under an origin- (destination-) based tax.

Limitations of Current Research

In general, most of the economic literature on the international effects of a consumption tax is theoretical and focuses primarily on developing the economic framework for analyzing how these effects are transmitted through the economy.[1] As noted above, the

[1] See bibliography, appendix C.

international implications of the tax are extremely difficult to model and analyze because of the multiple channels through which these effects work, their interaction with each other, and because in many instances these effects are offsetting. Most of the analytical literature examines the effects of changes in the tax regime on multinational corporations.[2] The taxation of these firms under the current system is extremely complex. Thus, while the findings of this analytical literature are unambiguous on certain points, conclusions regarding the overall effects of tax reform on the trade balance, international capital flows, or GDP are tentative. Firmer conclusions would require information on the sensitivity of a number of underlying economic variables to taxation; for example, whether equity inflows are more sensitive than debt outflows to tax changes.

More recently, a small number of empirical studies have attempted to provide estimates of the potential economic effects to the United States of switching to a consumption tax. These studies are based on economy-wide simulation models by the Joint Committee on Taxation (JCT, 1997) and Mendoza and Tesar (1998). While three of the JCT studies and Mendoza and Tesar provide estimates of the effects on international capital flows, it should be noted that none of these authors specifically constructed a model to address all the mechanisms by which such a policy change could influence international markets (as enumerated in chapter 3 of this report).[3] In particular, these simulation models generally do not contain an explicit treatment of FDI as distinct from other types of international capital flows. Consequently, they cannot capture the effects of changing the current complex system of taxing multinational firms, which is the focus of the existing literature. These results must be interpreted with great care in the present context; nonetheless, they provide a useful benchmark for gauging the potential magnitude of the effects of moving to a consumption tax. None of the available empirical analyses have attempted to provide a comprehensive estimate of the effects to U.S. trade and capital flows and capital stocks.

Given that the Commission's analysis has identified changes in the taxation of multinational firms as a major source of the potential international consequences of moving to a consumption tax, and that the impact of these changes is largely unquantified in the existing literature, analysis directed at gaining a quantitative appreciation of such changes would be useful. Such analysis would take into account current patterns of FDI, exports, imports, and corporate finance of both U.S. direct investment abroad and foreign direct investment in the United States, examining these patterns in the light of the hypothesized effects of a change in the tax regime on multinational firms and available information on international differences in tax rates and regimes. To the extent that a move to a consumption tax would induce an increase in the U.S. capital stock, the consequences of such an increase for international trade, particularly its commodity composition, could be assessed using currently available simulation models of the U.S. economy.

[2] Hines (1996a) and Grubert and Newlon (1995 and 1997) provide comprehensive summaries of the relevant theoretical literature.

[3] In the JCT symposium, the central focus was to assess the general reliability of simulation models in estimating the macroeconomic effects of potential tax changes, rather than to analyze specifically the impact of international markets for outcomes from tax reform. In order to assess the sensitivity of these estimates to modeling assumptions, modelers were encouraged to examine the effects of assuming either open or closed international capital markets, as well as altering assumptions about monetary policy and potential transition relief. For Mendoza and Tesar, the impact of international capital markets on the change in tax regime is of central interest. However, their modeling of these markets (as frictionless private bond markets, without FDI flows or international trade in public debt) is similar to the methods typically used by modelers in the JCT symposium.

APPENDIX A
REQUEST LETTER FROM THE HOUSE COMMITTEE ON WAYS AND MEANS

APPENDIX B
FEDERAL REGISTER NOTICE AND LIST OF SUBMISSIONS

APPENDIX C
BIBLIOGRAPHY

BIBLIOGRAPHY

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