UNITED STATES
DEPARTMENT OF THE TREASURY

TREASURY CONFERENCE ON BUSINESS TAXATION AND GLOBAL COMPETITIVENESS

BACKGROUND PAPER

U.S. DEPARTMENT OF THE TREASURY

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EXECUTIVE SUMMARY

The United States is increasingly linked to the world economy through trade and investment. Capital now flows more freely across the globe. Businesses start up and operate more freely across borders, and business location and investment decisions are more sensitive to tax and regulatory structures than in the past.

Maintaining the competitiveness of the U.S. economy requires that we carefully consider how our business tax environment can be designed to ensure that the United States continues to attract and generate the investment and innovation necessary to further advance living standards and real wages of the U.S. worker. The *Treasury Conference on Business Taxation and Global Competitiveness Background Paper* presents a broad overview of the business tax system with a focus on the following elements:

- the extent to which special provisions narrow the business tax base;
- the importance of the non-corporate sector generally subject to the individual tax rather than the corporate tax;
- the various ways the tax system distorts economic decisions; and
- how the level of U.S. tax compares with our major trading partners (G7, OECD, and emerging market countries).

Since 1980, the United States has gone from a high corporate tax-rate country to a low-rate country (following the Tax Reform Act of 1986) and, based on some measures, back again to a high-rate country today because other countries recently have reduced their corporate tax rates. Within the OECD, the United States now has the second highest statutory corporate tax rate (including state corporate taxes) – 39 percent – compared with the average OECD statutory tax rate of 31 percent.

Other countries continue to reduce their corporate tax rates, leaving the United States still further behind. Germany is expected to reduce its total tax rate from 38 percent to 30 percent in 2008. China has recently passed legislation that will unify its domestic and foreign corporate tax rate at 25 percent, substantially below the OECD average. France, Japan, and the United Kingdom all have signaled they may also lower their corporate rates.

Maximizing economic growth requires that a tax system raise a given amount of revenue with the least possible interference in economic decisions. Our current system for taxing businesses and multinational companies has developed in a patchwork fashion spanning decades, resulting in a web of tax rules that can harm the competitiveness of U.S. companies.

Fundamentally, businesses offer a convenient and efficient mechanism to combine the efforts of workers with capital and organize economic activity. However, our tax system disrupts and distorts a vast array of business and investment decisions, leading to an inefficient level and allocation of capital through the economy. A smaller and poorly allocated stock of capital lowers the productive capacity of the economy and reduces living standards. Importantly, workers share in these economic losses because they have less productive capital with which to work, and so earn lower wages.

A key policy question is the appropriate level of tax on the return to saving and investment. Taxes on capital income discourage saving and capital formation. Reduced capital formation gives labor less capital with which to work, which lowers labor productivity and reduces living standards. Moreover, with the continuing decline in corporate taxes abroad, the United States may become a relatively less attractive location in which to invest, further reducing U.S. labor productivity and living standards.

The U.S. tax system also taxes investment income very unevenly across sectors, industries, asset types, and financing. Uneven taxation causes investment decisions to be based in part on tax considerations rather than on the fundamental economic merit of investment projects. For example, profits from an equity-financed investment in the corporate sector are taxed more heavily than is the return earned on other investments. Corporate profits are subject to as many as three layers of tax: the corporate income tax, investor level taxes on capital gains and dividends, and the estate tax.

The double or triple taxation of corporate profits distorts a number of economic decisions important to a healthy economy. It distorts corporate financing choices by taxing interest earned on corporate bonds less heavily than corporate profits. As a result, corporations are induced to use more debt than they otherwise would. It distorts corporate distribution policy by taxing corporate earnings distributed as dividends more heavily than corporate earnings that are retained and later realized as capital gains. As a result, it confounds market signals of a company's financial health and may have important implications for corporate governance. It penalizes investment in the corporate form of business organization by taxing corporate income more heavily than other capital income. As a result, it discourages investment in and through corporations in favor of investment in other less heavily taxed forms of business (e.g., partnerships) or in non-business assets (e.g., owner-occupied housing). Of course, the double tax on corporate profits was reduced in 2003 with the enactment of lower tax rates on dividends and capital gains, but this relief, which was focused primarily on equity-financed investment, did not completely remove the double tax.

In contrast to corporate profits, the U.S. tax system taxes the returns to many other important investments very lightly, if at all. The return earned on investment in residential housing, for example, typically is not taxed at all. Furthermore, some business investment is eligible for various special tax provisions. In some cases, these special tax breaks actually subsidize the investment in the sense that they are sufficiently generous to make the net tax burden negative. These special tax provisions can encourage over-investment in the tax-favored activity. Even where they do not encourage over-investment, they substantially narrow the tax base and drive other tax rates higher, which may distort choices elsewhere in the economy. In addition, special tax breaks and preferences add complexity to the tax system and contribute to a substantial business tax compliance burden on the economy – estimated at $40 billion annually for business taxpayers.

The United States taxes income from foreign investment at the same rate as it taxes domestic income under the notion that investment abroad is a substitute for investment domestically. This system was developed at a time when the United States was the primary source of capital investment and dominated world markets. It might not suit a global landscape

that has shifted considerably over the past several decades, with other countries challenging the U.S. position of economic preeminence. For example, the United States is now a net recipient of foreign investment, rather than the largest source. In addition, there is some evidence that U.S. investment abroad may complement domestic investment and employment rather than compete with them, thereby challenging a key premise underlying our current tax system.

The individual income tax is also important to the taxation of businesses. The non-corporate business sector is subject to the individual income tax on the business income distributed to owners of flow-through entities – partnerships, S corporations, and sole proprietorships, many of which are small and an important source of innovation and risk-taking to our economy. These businesses also benefited from the 2001 income on tax rate deductions. According to Treasury Department estimates, roughly one-third of business taxes are paid through the individual income tax on business income distributed to the owners of these flow-through entities. The importance of the non-corporate business sector has grown substantially over time. This sector has more than doubled its share of all business receipts since the early 1980s, and plays an unusually important role in the U.S. economy as compared to other OECD countries. Flow-through businesses account for one-third of salaries and wages and claim 27 percent of depreciation deductions. Moreover, flow-through income is concentrated in the top tax brackets, with this group receiving over 70 percent of flow-through income and paying more than 80 percent of the taxes on this income.

CHAPTER 1: OVERVIEW OF THE TAXATION OF BUSINESS INCOME IN THE UNITED STATES

A. Introduction

Under current law, income earned by a corporation generally is taxed at the corporate level. When the corporation distributes earnings to shareholders in the form of dividends, the income generally is taxed again at the shareholder level. If the corporation retains earnings, the value of its stock reflects those earnings and the shareholder is taxed on realized capital gains. Thus, corporate income on equity-financed investments is taxed twice. In contrast, investors who conduct business activity in a flow-through business entity, such as a partnership or sole proprietorship, are taxed once on their earnings at their individual income tax rate.

B. Corporate income tax

Corporations are generally subject to tax on their receipts less the cost of doing business. To compute taxable income, a corporation deducts expenses paid or incurred during the taxable year from gross business income. These expenses include wages, state and local taxes, depreciation, interest expense, and other expenses. Expenditures that produce benefits in future taxable years, such as expenditures on plant and equipment, are capitalized and recovered over time through depreciation, amortization, or depletion allowances. When deductions exceed income, a corporation has a net operating loss. Net operating losses can be carried back 2 years and carried forward for 20 years to offset taxable income. Deductions are also allowed for certain amounts for which the corporation did not make expenditures. For example, a deduction is allowed for a portion of income attributable to certain manufacturing activities. Certain other payments by corporations, such as dividends paid to shareholders, are not deductible.

U.S. corporations are subject to tax on foreign source as well as domestic source income. Although a U.S. corporation is required to pay U.S. tax currently on foreign income earned through a foreign branch, U.S. tax generally is not imposed on the active earnings of a foreign subsidiary until the subsidiary distributes the income to the parent corporation as a dividend (i.e., until income earned abroad is repatriated back to the United States). However, certain passive income, such as portfolio income, is taxed when earned regardless of whether it is repatriated to the United States. In computing U.S. tax liability, U.S. taxpayers (including corporations) are allowed a credit for foreign taxes paid.

In addition to these general rules, special rules apply to specific types of business that conduct activity in corporate form, such as insurance companies. Other special rules apply to specific types of activities, such as exploration and development of natural resources. Certain types of corporations are granted full or partial relief from corporate level tax.

Corporations are taxed at the rate of 15 percent on the first $50,000 of taxable income, 25 percent on taxable income from $50,001 to $75,000, 34 percent on taxable income from $75,001 to $10 million, and 35 percent on taxable income above $10 million. The first two graduated rates are phased out for corporations with taxable income between $100,000 and $335,000 and the 34-percent rate is phased out between $15,000,000 and $18,333,333 in taxable income.

Under the corporate income tax, there is no separate rate structure for capital gains. Thus, the maximum rate on net capital gains is 35 percent. Capital losses in excess of capital gains are not deductible, but may be carried back 3 years or carried forward 5 years.

Corporations are taxed at lower rates on income from certain production activities through the allowance of a special deduction. For taxable years beginning in 2007, 2008, and 2009, the deduction for domestic production activities is 6 percent of the income from manufacturing, construction, and certain other specified activities. Beginning in 2010, the deduction is increased to 9 percent. The 9-percent deduction is (approximately) equivalent to taxing income at a tax rate of 31.85 percent (i.e., 91 percent of income is taxed at a 35-percent rate, or 31.85 percent).

Corporations are also eligible to claim tax credits related to certain activities, such as the tax credit for research and experimentation, the low income housing tax credit, the enhanced oil recovery credit, and others.

A corporation is also subject to an alternative minimum tax, which is payable to the extent that it exceeds the corporation's regular tax liability. The alternative minimum tax is imposed at the rate of 20 percent on a base that is broader than the regular tax base. The exemption amount for the corporate alternative minimum tax is $40,000. If a corporation pays the alternative minimum tax, the amount of tax paid is allowed as a credit against the regular tax in future years.

A corporation generally is treated as distinct from its shareholders. Distributions to shareholders in the form of dividends generally are taxable to the shareholders. Corporate earnings that are retained and reflected in stock value are taxed as capital gains on disposition of the stock. Thus, corporate profits on equity-investments are generally taxed twice – once at the corporate level when the income is earned, and again at the individual level when received by the shareholder as a dividend or capital gain. Amounts paid as interest to debt holders are only taxed at the recipient level because they are allowed as a deduction by the corporation.

C. Taxation of flow-through businesses

Flow-through businesses include sole proprietorships, partnerships, and S corporations. Sole proprietorships are businesses owned by a single individual taxpayer. Partnerships are unincorporated organizations formed by two or more entities or persons, with no limitations on their size or types of partners.[1] S corporations (or small business corporations) are domestic corporations meeting certain conditions that elect not to be subject to the corporate income tax. Those conditions include having no more than 100 shareholders, no ineligible shareholders, and only one class of stock.[2]

Flow-through businesses are generally not treated as taxable entities, but rather income and expenses are passed through to their owners – hence the name, "pass-through entities."

[1] Limited liability companies (LLCs) are entities that generally choose to be taxed as partnerships.
[2] Generally only individuals may be shareholders, with exceptions for certain trusts, estates, and non-profit organizations. Nonresident aliens may not be shareholders.

Income earned (whether distributed or not) is taxed to the owners at their own tax rates along with income they may receive from other sources. Losses, rather than accumulated as net operating losses at the entity level, are also passed through to the owner. For the owner, losses may be used to offset positive income from other sources unless the losses are subject to limitations, such as the "at risk rules" or "passive activity loss" rules.

Income is measured largely as it is for corporations, with flow-through businesses deducting the same items of expense as a corporation and eligible for the same credits against tax. The character of items of income, expense, and credits passes through to the owners. For example, S corporations and partnerships separate capital gains from ordinary income in their reporting to their owners because capital gains may be taxed at lower rates than ordinary income of individuals.

There is no minimum tax levied on flow-through businesses themselves. Items of income, expense, and credit pass through to the owners, where they may be subject to individual or corporate alternative minimum tax.

CHAPTER 2: SPECIAL CORPORATE TAX PROVISIONS AND POTENTIAL GAINS FROM BROADENING THE CORPORATE TAX BASE

A. Introduction

The current business tax base includes an array of special provisions that reduce taxes for particular types of activities, industries, and businesses. These provisions take the form of exclusions from income, deductions allowed or enhanced from what otherwise would be allowed, preferential tax rates, income deferral, and tax credits. Some of these provisions are intended to ease tax compliance and administration, such as allowing cash accounting for small corporations, but others were intended by Congress to encourage particular types of activity. The premise underlying many of the special provisions is that they promote activities that have spillover effects, or address various externalities or market failures. Unwarranted tax subsidies may lead to the misallocation of capital, as they encourage investment decisions based on tax characteristics rather than economic fundamentals, and generally reduce economic growth.

Together, these provisions substantially narrow the corporate tax base, which requires that tax rates be higher in order to raise the same tax revenue. For example, it is estimated that these special corporate tax provisions narrow the corporate tax base by roughly 25 percent. If the tax base were broadened by removing these special provisions, the top corporate tax rate of 35 percent could be reduced to 27 percent, or, as an alternative, about 40 percent of investment costs could be written off immediately (i.e., expensed) by all businesses.

Under a comprehensive business income tax, businesses would include all sources of income and subtract all expenses incurred to earn income. While it is simple to measure and subtract the cost of inputs that are used up during the year in which they are purchased, it is much more difficult to properly account for the cost of durable inputs like machinery and buildings, which last for more than one year. A consistent measurement of income would require that businesses be allowed to subtract the decrease in economic value of such durable assets (including intangible assets, such as advertising and copyrights) to account for their decrease in value (i.e., economic depreciation), which represents an economic cost to a firm. A comprehensive income tax base also would not include unwarranted tax subsidies because they distort economic decisions.

B. Distortions caused by tax incentives

A primary effect of targeted tax incentives is to further encourage the activities that benefit from the favorable taxation. This expansion may occur at the expense of other economic activities, and the value of what is lost can exceed the value of what is gained, reducing the overall value of society's output of goods and services.

For example, consider an investment incentive targeted to widget production. Without the investment incentive, an investment in widgets would yield the same pre-tax rate of return as other investments, say 10 percent per year. The 10-percent rate of return is sufficient to cover taxes and provide investors their required after-tax rate of return, say 7 percent.

Now consider the effects of an investment incentive that cuts taxes on widget investments so that a 10 percent pre-tax return now yields 8 percent after taxes. Since other investments yield only 7 percent after taxes, investment funds will flow into widget production and out of other activities. Indeed, this presumably is the intention of the tax incentive. The expansion of the widget industry will reduce the pre-tax return available on widget investments as, for example, investments expand into less productive technologies. The declining pre-tax return will lower the after-tax return, and eventually expansion into widget investments will stop when the after-tax return falls to 7 percent, the same return as available elsewhere in the economy. However, when the expansion stops, widget investments will yield a pre-tax return that is below the 10 percent pre-tax return provided by other investments. Say the pre-tax return on widgets falls to 8 percent. In that case, society will have given up investments that earn 10 percent in exchange for investments that earn only 8 percent, for a net loss of 2 percent. If the additional economic activity encouraged by the special tax treatment is not warranted by, for example, spillover effects or externality considerations, the tax incentive would have reduced the productivity of the nation's stock of capital.

Tax incentives also may impose costs on society even when the tax incentive is unsuccessful in expanding the tax favored activity. If other taxes are raised to offset the revenue needed to cover the tax incentives, these other taxes introduce distortions of their own. In addition, taxpayers expend resources attempting to win favorable tax breaks. Such lobbying expenditures are a pure loss to society because their only effect is to transfer economic resources from one group to another.

Targeted tax incentives also add to the complexity of the tax system. Rules and regulations have to be established to ensure that the incentives are limited to their intended beneficiaries. Taxpayers have to spend time and money learning about tax incentives. The Internal Revenue Service (IRS) has to spend resources monitoring and enforcing the rules. Disputes invariably will arise between the taxing authority and taxpayers, and society will expend resources adjudicating these disputes.

The recently enacted domestic production activities deduction and the research and experimentation (R&E) credit serve as examples of the types of complexity that can be created by targeted tax incentives. The production deduction allows firms to claim a special additional deduction in computing taxable income. Once fully phased in, the deduction is 9 percent of qualified income. The deduction is structured to be similar in effect to a reduction in the statutory tax rate, e.g., from 35 percent to 32 percent once fully phased in.

The production deduction, however, is not universally available and is much more complicated than a simple, across-the-board cut in the tax rate. The deduction is subject to a number of limitations and restrictions and is only available for certain qualified activities of a business. As a result, the tax code and accompanying tax regulations must specify which activities of a business qualify for the deduction. For taxpayers, this requires a completely new set of accounting distinctions so that all revenue and expense can be attributed to qualified domestic production activities on an item-by-item basis. Property is typically includable while services are not; domestic activities are includable while foreign activities are not. Many firms have no business reason to track their activities in these ways, but now are subject to a tax

requirement to do so. Furthermore, this deduction is subject to limits based on wage payments and taxable income calculated without this deduction. Extensive measurements and calculations are required, necessitating a significant amount of judgment. One example of the problem created by this provision is that now virtually all taxpayers will have to make transfer pricing determinations, rather than the relatively smaller number of multi-national firms who historically had transfer pricing issues. These complicated determinations are likely to lead to disputes between the taxpayer and the IRS regarding what qualifies for special treatment under this provision. As has been noted by several observers, provisions like the domestic production deduction are not unprecedented. Canada implemented a similar provision that was found to be complex and difficult to administer. As a result of those problems, the provision was repealed and replaced with a general tax rate cut.

While research and experimentation undoubtedly has positive externalities for the economy, the R&E credit has been one of the most controversial issues between taxpayers and the IRS. Much of this controversy arises from uncertainty over the interpretation of the statutory requirements for credit eligibility. The definition of eligible research is inherently difficult, and in audits of taxpayers the IRS is required to make technical judgments about whether an activity was directed to produce truly innovative products or processes. These audits create a burden for both the IRS and taxpayers. The credit also creates significant compliance costs. Businesses are required to maintain detailed records for the credit, which may differ from the types of records normally kept by its operational units. The design of the credit also creates complexity. Taxpayers have three alternative research credit structures to choose from and have to make multiple calculations to determine which credit structure provides the most favorable tax treatment. While a subsidy to encourage private-sector investment in research may be viewed as desirable, the administrative difficulties erode the positive incentives the provision provides.

In addition to being targeted, many tax incentives are temporary. Temporary tax provisions create a number of problems. If the provisions actually are temporary, they have no long-term effect on economic decisions, which calls into question their rationale. They might do little more than alter the timing of investments and serve as a give-away to the tax favored activity. Temporary tax provisions add uncertainty to the tax system, and make it difficult for businesses to plan their future activities and investments effectively. Temporary tax provisions also encourage relatively large amounts of lobbying expenditures, as taxpayers continually seek to extend purportedly temporary tax incentives. The R&E credit is an example of a (seemingly permanent) temporary tax provision. It has been scheduled to expire on a regular basis since its inception in 1981, but actually lapsed for only a single one-year period.

Although targeted tax incentives may create economic distortions, in some instances their intended purpose is to correct economic distortions caused by a market failure. The R&E credit is an example of a targeted tax incentive that attempts to correct a market failure. Without a subsidy, the private market might not allocate enough resources to research because private inventors cannot reap the full benefit of their inventions. It can be difficult for inventors to charge all those who use or benefit from their invention. For example, an invention might be copied by others, or it might pave the way for further improvements. Because the inventor might not be able to collect the invention's full return, he has an insufficient incentive to conduct research and develop innovations. He foregoes investments in research that produce social

benefits in excess of their private costs. A tax subsidy is one way to increase the return available to the private inventor, and correct for the failure of the private market to reward innovation sufficiently.

For purposes of addressing an externality like this, the tax system is a limited policy tool. The most significant limitation is that a substantial fraction of firms owe no corporate tax; the portion of corporations without annual tax liability has recently varied between 40 percent and 50 percent of the total number of corporations. Since tax preferences are non-refundable, they are of no immediate value to firms without taxable income.

It has been estimated that businesses spent approximately $40 billion complying with the tax code in 2004.[3] While this is the total cost of compliance, the existence of special targeted tax provisions greatly complicates the tasks of complying with and administering the tax code. Eliminating these special provisions would reduce these compliance costs as well as opening opportunities for additional simplifications.

C. Targeted tax preferences forgo government tax revenue and cause tax rates to be higher for all businesses

The resources, in terms of revenue forgone, spent providing narrow targeted tax provisions could be used instead to provide sector-wide incentives for economic growth. Lowering the corporate tax rate or providing more rapid capital cost recovery (i.e., accelerated depreciation or expensing) would reduce the distortions caused by the corporate tax. This section discusses the revenue that could be raised by repealing various business tax preferences. It also shows the effect of using this revenue either to reduce the corporate tax rate or to provide partial expensing of capital investments.[4]

Table 2.1 shows the revenue that could be raised over a 10-year period by repealing all corporate tax preference items effective January 1, 2008. The table itemizes all the preferences that, if eliminated, would raise more than $5 billion over a 10-year period, assuming the corporate tax would have a comprehensive income base with the same statutory tax rates as the current system. The estimates assume no transition rules except for accelerated depreciation, which is repealed only for investments made beginning in 2008.

[3] Testimony of Dr. Joel Slemrod before the House Ways and Means Committee, June 15th 2004.

[4] The estimates are measured relative to the FY 2008 Budget forecast of receipts. This forecast is for the Administration's proposed policies, which includes the permanent extension of the R&E tax credit. In measuring the revenue that could be raised from repealing all tax preferences, only income accruing to corporations is reported. However, it also is assumed that these tax preferences are repealed for individuals to foreclose the possibility that the revenue loss migrates to the individual sector. Furthermore, we hold the corporate sector constant and ignore the response to the incentives for business activity to migrate to or from the individual sector and the corporate sector in response to this hypothetical expansion of the corporate tax base.

Table 2.1: Special Provisions Reduce the Corporate Tax Base by up to 25 Percent

	2008-2017 FY; $Billions
Baseline Corporate Income Tax Revenues, FY2008 Budget	3,711
Major Preferences Under the Current Corporate Income Tax	
Deduction for US production activities	210
Exclusion of interest on state and local bonds	135
Research and experimentation (R&E) tax credit	132
Deferral of income from controlled foreign corporations	120
Low income housing tax credit	55
Exclusion of interest on life insurance savings	30
Inventory property sales source rules exception	29
Deductibility of charitable contributions	28
Special ESOP rules	23
Exemption of credit union income	19
New technology credit	8
Special Blue Cross/Blue Shield deduction	8
Excess of percentage over cost depletion, fuels	7
Other corporate preferences 1/	27
Total	**831**
Additional Preference Under a Comprehensive Corporate Income Tax	
Expensing and accelerated depreciation provisions	**410**
Total Revenue from Preferences	**1,241**

1/ None of the corporate preferences listed in this category exceed $5 billion over the 10-year budget window.

Source: U.S. Department of the Treasury, Office of Tax Analysis.

The revenue forgone from the existence of corporate tax preferences comes at a significant cost to economic efficiency. If the revenue from tax preferences were used to lower the corporate tax rate, the rate could be lowered from 35 percent to 27 percent while producing approximately the same revenue. Alternatively, partial expensing on new tangible investments (equipment and structures) could be provided. Viewing the corporate sector in isolation, first year expensing of 80 percent of the cost of new tangible investments could be provided on a revenue-neutral basis. About 40-percent expensing of the cost of new tangible investments could be provided on an economy wide basis (i.e., applying to both the corporate and non-corporate sectors).[5]

D. Conclusion

The presence of numerous special provisions that narrow the corporate tax base forgoes the opportunity for a more efficient and pro-growth tax system. If special provisions were eliminated, the top corporate tax rate could be lowered to 27 percent or more than 40 percent expensing could be provided to all businesses for new the cost of tangible investments, and the tax system would produce the same level of revenue.

[5] Almost 75 percent of non-residential structures are held outside the corporate sector of the economy. This estimate that business tax broadening could finance 40 percent expensing for new tangible investment also includes an additional $320 billion in base broadening from repealing accelerated depreciation of tangible capital in the non-corporate sector.

CHAPTER 3: TAXATION OF THE NON-CORPORATE BUSINESS SECTOR: FLOW-THROUGH BUSINESS IN THE UNITED STATES

A. Introduction

The individual income tax system plays an important role in the taxation of U.S. business income. A substantial share of business activity and income is generated by flow-through entities not subject to the corporate income tax but instead generally taxed to individual owners. It is the tax rates levied by the individual income tax system on this flow-through income that affect the growth and economic health of these smaller, more entrepreneurial businesses.

This chapter first describes the relative size of the flow-through sector and its growing importance over time, and then examines the individual income taxes levied on flow-through income. Finally, it discusses recent research on the sensitivity of entrepreneurial activity to changes in individual income tax rates.

B. The importance of flow-through businesses in the U.S. economy

While major corporations contribute a disproportionate share of economic activity (the 17,500 largest C corporations produced over half of all business receipts, generated nearly half of net income, and paid 91 percent of all corporate income taxes in 2004), policy discussions often overlook the substantial and growing contribution of flow-through businesses, where income is primarily subject to tax at the level of the individual taxpayer[6]: 20.6 million sole proprietorships, 3.5 million S corporations, and 2.5 million partnerships. Although many of these 27 million businesses are small, in the aggregate they generate about one-third of business receipts and total deductions and one-third of salaries and wages, and claim 27 percent of depreciation deductions (Table 3.1, Column 1). In addition, flow-throughs produce half of business net income. As with C corporations, the few, very large pass-through businesses (with receipts exceeding $50 million) contribute a disproportionate share of economic activity. As Column 2 shows, the 18,250 biggest flow-throughs are generally responsible for over one-third of all flow-through activity, or about 10 percent to 15 percent of activity from all types of businesses: 13 percent to17 percent of all receipts, deductions, and net income; and about 10 percent of specific expenses like wages and salaries and depreciation.

[6] Not all net income generated by flow-through businesses ends up on the tax returns of individuals for several reasons: about 36 percent of partnership total income goes to "corporate" partners with an unknown split between C and S corporations; some S corporation shareholders are Employee Stock Ownership Plans (ESOPS), IRAs, and certain trusts; and some flow-through income that should be reported on individual returns is simply underreported.

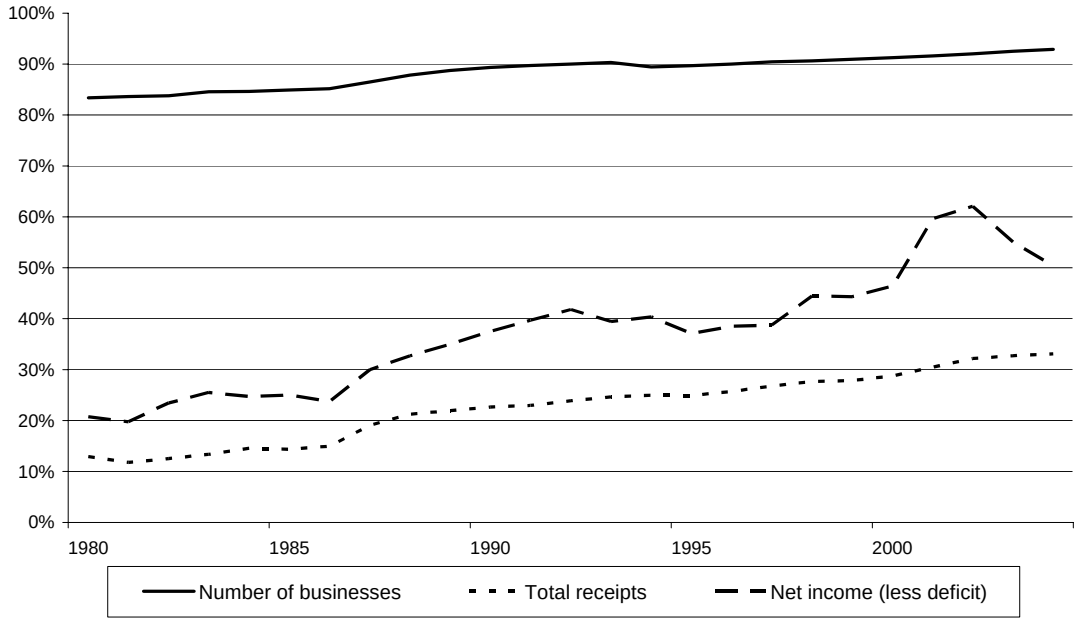
Table 3.1: Contributions to Business Activity by Type of Entity, 2004

Selected items from tax returns	All Flow-Throughs	Major Flow-Throughs (Over $50M receipts)	All C Corporations	Major C Corporations (Over $50M receipts)
	(As percentage of all businesses)			
Number of businesses	93%	--	7%	--
Total receipts	33%	13%	67%	57%
Business receipts.	36%	14%	64%	54%
Total business deductions	33%	13%	68%	57%
Costs of goods sold	34%	17%	66%	57%
Wages and salaries	34%	10%	66%	53%
Depreciation	27%	9%	73%	65%
Net income	50%	16%	50%	48%
Net income (positive)	51%	14%	49%	41%
Deficit	53%	7%	47%	17%
Corporate income taxes	--	--	100%	91%

Source: Internal Revenue Service, Statistics of Income, published and unpublished data.

The importance of flow-through businesses to the U.S. economy has been growing steadily over the last several decades. As Chart 3.1 shows, while the vast majority of businesses are consistently flow-throughs (predominantly sole proprietorships) rising from 83 percent in 1980 to 93 percent in 2004, the economic activity generated in this sector has increased considerably. The share of all receipts and net income generated by flow-through businesses has more than doubled since the early 1980s; the flow-through share of total receipts rose from 13 percent in 1980 to 33 percent by 2004, and the share of net income grew from 22 percent to 50 percent. S corporations and partnerships have been the source of this growing share, with

Chart 3.1: Flow-through Shares of All Business Returns, Receipts, and Net Income, 1980-2004



Source: Internal Revenue Service, Statistics of Income, www.irs.gov/taxstats.

sole proprietorship contributions steady or declining (Table 3.2). S corporations were the main source for growth in receipts, with their share rising from 3 percent to 17.6 percent over this period, while partnerships saw their net income rise from 2.6 percent to 21.4 percent of the total from all businesses.

Table 3.2: Shares of Total Business Returns, Receipts and Net Income, 1980-2004

	1980	1985	1990	1995	2000	2004
S Corporations						
Returns	4%	4%	8%	10%	11%	12%
Total Receipts	3%	5%	13%	15%	15%	18%
Net Income (less Deficit)	1%	3%	8%	10%	14%	15%
Partnerships 1/						
Returns	11%	10%	8%	7%	8%	9%
Total Receipts	4%	4%	4%	5%	9%	11%
Net Income (less Deficit)	3%	-3%	3%	11%	18%	21%
Sole Proprietorships						
Returns	69%	71%	74%	73%	72%	72%
Total Receipts	6%	6%	6%	5%	4%	4%
Net Income (less Deficit)	17%	25%	26%	17%	15%	14%

1/ Includes LLCs & LLPs

Source: Internal Revenue Service, Statistics of Income, www.irs.gov/taxstats.

Small business also employs a substantial fraction of the labor force, although data are unavailable to distinguish employment by C corporations from employment by flow-through

businesses. In 2003, half of the private labor force worked for major employers (firms with 500 or more employees), while 36 percent worked for firms with fewer than 100 employees.[7]

C. Taxation of flow-through income at the individual level.

In 2006, 27 million individuals reported an estimated $938 billion in income from sole proprietorships, S corporations, and partnerships on their tax returns (including capital gains passed through on Schedule D) and paid an estimated $159 billion in income taxes (Table 3.3).[8] (For comparison, it is estimated that, C corporations in 2006 paid $359 billion of corporate income tax, which implies net income of approximately $1,200 billion.[9])

Table 3.3: Flow-through Income and Individual Income Taxes, 2006

	Taxpayers with Flow-through Income/loss		Flow-through Income/Loss 1/		Tax on Flow-through Income/loss	
	millions	%	$billions	%	$billions	%
All Flow-through income						
All taxpayers	27.5	100%	938	100%	159	100%
Taxpayers in:						
Top 2 tax brackets	2.1	8%	671	72%	131	82%
Top tax bracket	1	4%	573	61%	113	71%
Active, positive flow-through income						
All taxpayers	18.3	100%	762	100%	145	100%
Taxpayers in:						
Top 2 tax brackets	1.4	7%	433	57%	109	75%
Top tax bracket	0.7	4%	349	46%	92	64%
Flow-through income > 50% wages						
All taxpayers	11.9	100%	880	100%	156	100%
Taxpayers in:						
Top 2 tax brackets	1.1	9%	608	69%	127	81%
Top tax bracket	0.6	5%	527	60%	110	70%

1/ "Flow-through income/loss" includes net ordinary income from sole proprietorships, S corporations, and partnerships plus net long-term and short-term gains from partnerships, S corporations, estates and trusts.

Source: U.S. Department of the Treasury, Office of Tax Analysis - analysis of unpublished IRS data.

Top bracket taxpayers received a disproportionate share of flow-through business income and paid an even larger share of the tax on it; taxpayers in the highest two tax brackets made up 8 percent of all taxpayers receiving any flow-through income or loss, but they received 72 percent of the net flow-through income and paid 82 percent of the taxes on this flow-through income (Table 3.3). Four percent of the taxpayers reporting flow-through income fell into the

[7] U.S. Small Business Administration, Office of Advocacy, based on data provided by the U.S. Census Bureau, Statistics of U.S. Business and Nonemployer Statistics.

[8] These taxes paid are estimated "stacked last," as if the income is viewed as the last income received and taxed at the taxpayer's top marginal tax rates. If the income is viewed as being received proportionately to the rest of the taxpayer's income, the results would be similar.

[9] Source: Unpublished U.S. Treasury Department estimates.

highest tax bracket and accounted for 61 percent of the flow-through income and 71 percent of the taxes on that income.

Similar conclusions are reached with narrower definitions of flow-through income as well. Considering only active, positive income, 7 percent of taxpayers fell in the top 2 brackets, receiving 57 percent of the income and paying 75 percent of the taxes. Among taxpayers whose flow-through income amounted to at least 50 percent of their wages, 9 percent were in the top brackets, receiving 69 percent of the income and paying 81 percent of the taxes.

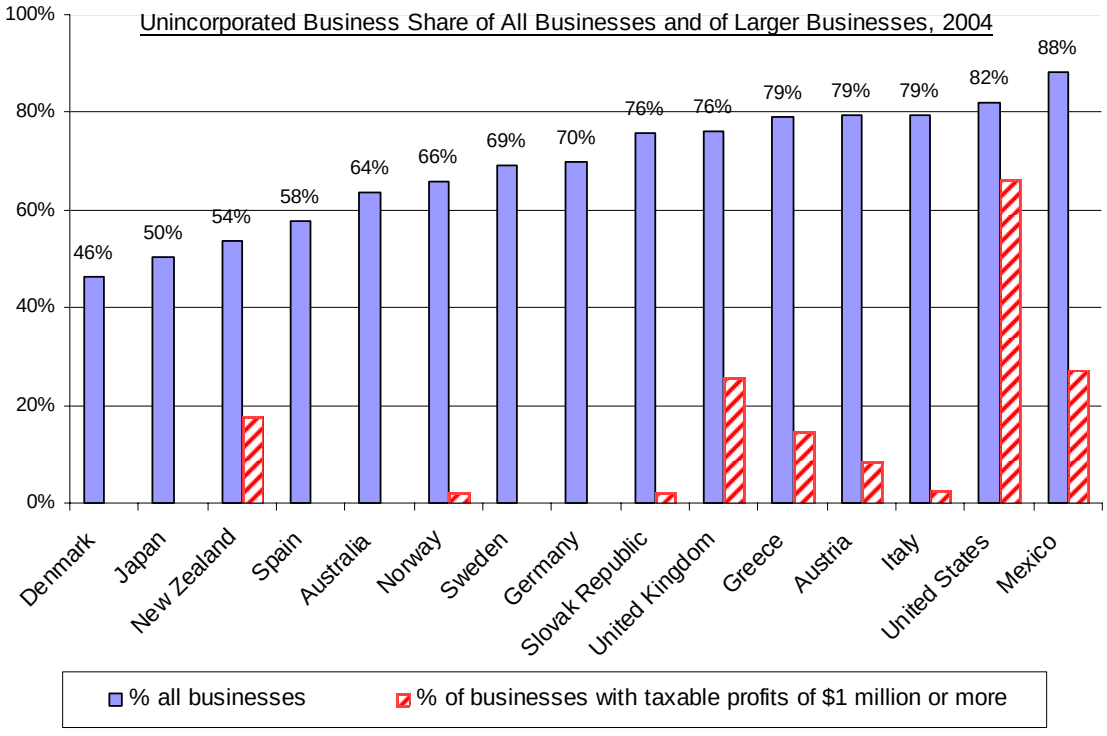
Because flow-through income is concentrated in the top tax brackets, the reductions enacted in 2001 and 2003 in the highest two marginal income tax rates have important consequences for the recipients of this income – typically owners of small and entrepreneurial businesses. For 2007, the Treasury Department estimates that about 75 percent of the taxpayers who will benefit from lowering the top rate from 39.6 percent to 35 percent are flow-through business owners, and that 84 percent of the tax reduction from the top rate reduction will go to flow-through business owners.

D. International experience with non-corporate businesses

Compared to other OECD countries, non-corporate businesses play an unusually important role in the U.S. economy. Of the 15 nations reporting in a recent OECD survey, only in Mexico did the unincorporated sector represent a larger share of the total number of businesses (88 percent) than in the United States (82 percent) (Chart 3.2).[10] More important for their influence on general economic activity is the size of U.S. non-corporate businesses; they are more heavily represented among large businesses than in other countries reporting to the OECD. Sixty-six percent of the U.S. businesses reporting profits of $1 million or more were not incorporated, compared to 27 percent in Mexico, 26 percent in the United Kingdom, and 17 percent in New Zealand.

[10] Although they are flow-through businesses, S corporations are counted here with other corporations because they are incorporated.

Chart 3.2: The U.S. Has Among the Largest Unincorporated Business Sectors Within the OECD



Source: OECD, Center for Tax Policy and Administration, "Survey on the Taxation of Small and Medium-Sized Enterprises: Draft Report on Responses to the Questionnaire," revised 5 July 2007; Tables 1-3.

The non-corporate sector in the United States differs from a number of its OECD counterparts in that businesses can organize in ways to receive limited liability protection without having to incorporate and face the corporate income tax. S corporations, limited partnerships, and limited liability companies (LLCs) all offer pass-through tax treatment along with limited liability for their owners.[11] Of 17 countries responding to a question from the OECD, 7 reported having no form of business organization that provides limited liability without an obligation for the corporate income tax (Table 3.4).

[11] Limited partnerships require a general partner that has liability, but that partner can itself be an entity, such as a corporation, whose owners have limited liability.

Table 3.4: Treatment of Dividends by Availability of Limited Liability without Corporate Income Taxation in OECD Countries

Countries by answer to the question, "Is it possible to have limited liability without full corporate income tax (CIT) obligation?"

Yes - Limited Liability Without CIT		No – Limited Liability requires CIT	
Country	**Type of Dividend Treatment**	**Country**	**Type of Dividend Treatment**
Australia	FI	Austria	CL
Denmark	MCL	Belgium	CL
Germany	PIN	Canada	PI
Japan	MCL	Italy	PIN
New Zealand	FI	Mexico	PI
Norway	OTH	Poland	MCL
Slovak Republic	NST	Spain	PI
Sweden	CL		
United Kingdom	PIN		
United States	MCL		

Key to abbreviations:

CL: Classical system (dividend income is taxed at the shareholder level in the same way as other types of capital income (e.g., interest income)).

MCL: Modified classical system (dividend income taxed at preferential rates (e.g., compared to interest income) at the shareholder level).

FI: Full imputation (dividend tax credit at shareholder level for underlying corporate profits tax).

PI: Partial imputation (dividend tax credit at shareholder level for part of underlying corporate profits tax).

PIN: Partial inclusion (a part of received dividends is included as taxable income at the shareholder level).

NST: No shareholder taxation of dividends (no other tax than the tax on corporate profits).

OTH: Other types of systems.

Sources: OECD, Center for Tax Policy and Administration, "Survey on the Taxation of Small and Medium-Sized Enterprises: Draft Report on Responses to the Questionnaire," revised 5 July 2007; Table 8.

OECD: http://www.oecd.org/dataoecd/26/51/33717596.xls. Part II, Table II.4.

Flow-through tax treatment combined with limited liability provides an opportunity for businesses to receive some of the benefits of the corporate form, but without paying both the corporate and individual level taxes on corporate earnings. Although limited liability is not the only factor that businesses consider in deciding whether to incorporate (for example, in the United States, non-corporate firms generally do not have access to public capital markets[12]), the absence of limited liability outside of the corporate sector would tend to encourage incorporation, particularly among larger enterprises. In addition, the ability to receive the

[12] In certain industries (mainly real estate and natural resources), partnerships may be publicly traded without being taxed as a corporation. About 75 partnerships operate this way. (National Association of Publicly Traded Partnerships.)

benefits of the corporate form outside of the corporate income tax might influence a country's approach to addressing the double tax on corporate profits.

While the data are sparse, a simple look at available OECD data does not suggest either of these possible influences. Three of the four countries with the highest fraction of unincorporated businesses – Austria, Italy, and Mexico – report no limited liability without corporate income tax (Table 3.4 and Chart 3.2). Furthermore, a comparison of the ways countries treat dividends shows no obvious difference between the countries where limited liability requires paying the corporate tax and where it does not (Table 3.4).

An alternative examination of the importance of the non-corporate sector came in a recent study from the European Commission that suggests that relative tax rates matter.[13] The authors find that "the tax [wedge] between personal and corporate tax rates exerts a significant positive effect on the degree of incorporation." They note that the gap between personal and corporate tax rates in EU countries has grown since the early 1990s, from around 12 percent to over 20 percent.[14] The resulting shifting of income from the personal to the corporate sector has in turn contributed to the stabilization of the corporate tax-to-GDP ratio in the face of falling corporate tax rates. They find that income shifting has contributed about 0.2-percentage points to the stabilization of the tax-to-GDP ratio since the early 1990s.[15]

E. Evidence on responsiveness of individual business to taxes

Taxes can affect flow-through businesses and entrepreneurs in a number of ways. Many authors have examined tax effects on the attractiveness of self-employment and entrepreneurship relative to working for wages, while others have considered the influence of taxes on how entrepreneurs run their businesses. In terms of the self-employment rate and the prevalence of entrepreneurial activity, the literature early recognized the importance of differential taxation of self-employment and wages. Until the 1980s, payroll taxes favored the self-employed. While the self-employed are generally able to deduct business expenses against business income – including some expenses that provide personal consumption benefits such as vehicles, meals, and housing – some fringe benefits for the self-employed receive less favorable treatment than for employees.

The literature has also highlighted the importance of loss-offset rules for undertaking self-employment. While taxes reduce the likely return from an endeavor, loss offsets can allow the individual to share the risk of failure with the government, somewhat cushioning the discouraging effect of taxes on positive returns. The effects of progressivity have been noted as discouraging entry into self-employment and entrepreneurship. The ability of the self-employed to incorporate to take advantage of rates that might be lower than on their personal income (either low-bracket corporate rates or top corporate rates when the top personal rate exceeded the top corporate rate) has also been recognized as an advantage of self-employment. Furthermore,

[13] DeMooij, Ruud A. and Gaetan Nicodème, "Corporate tax policy, entrepreneurship and incorporation in the EU," European Commission, Directorate-General for Economic and Financial Affairs, No. 269. January 2007.
[14] DeMooij and Nicodème, p. 44.
[15] DeMooij and Nicodème, p. 47.

the fact tht these is less third-party reporting on the incomes of the self-employed and the greater opportunities for tax evasion have been seen as an attraction of self-employment for some.

The results of empirical efforts to quantify these possible influences on self-employment remain inconclusive, but recent research generally suggests a negative effect of taxes on self-employment.[16] Earlier studies sometimes found a positive relationship between taxes and self-employment.[17]

Other authors have considered the effect of the tax system on decisions that the self-employed and entrepreneurs face in running their businesses, on their decisions to hire labor, invest, and grow. Although the empirical work was limited to sole proprietorships, the evidence consistently indicates that higher marginal tax rates on individual income discourage small businesses from expanding.

Specifically, Carroll et al. (1998) found that, through increases to the user cost of capital, higher individual income tax rates reduced investment spending of entrepreneurs and the probability that they invested at all; a 5-percentage point increase in the individual marginal tax rate: (1) reduced the percentage of entrepreneurs who made new capital investments by 10.4 percent, and (2) reduced the mean amount of investment by 9.9 percent.[18] [19] Higher individual tax rates were also found to discourage both the likelihood of hiring workers and, given the decision to hire, the total amount of a firm's wages.[20] A 10-percent increase in the net-of-tax share (i.e., 1 minus the marginal tax rate) produced a 12-percent increase in the mean probability

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[16] Bruce, Donald and Tami Gurley-Calvez, "Federal Tax Policy and Small Business," In Overcoming Barriers to Entrepreneurship, Rowan and Littlefield Publishers, forthcoming. Also, Kevin B. Moore found a negative but insignificant relation using Survey of Consumer Finance data. "The Effects of the 1986 and 1993 Tax Reforms on Self-Employment," (February 2004), FEDS Working Paper No. 2004-05. William M. Gentry and R. Glenn Hubbard find that progressivity in the face of incomplete loss offset discourages entrepreneurship. "'Success Taxes,' Entrepreneurial Entry, and Innovation," Working Paper No. 10551, National Bureau of Economic Research, June 2004.

[17] Among the research is Donald Bruce, "Effects of the United States tax system on transitions into self-employment," *Labour Economics* (2000), 545-574. Donald Bruce, "Taxes and Entrepreneurial Endurance: Evidence from the Self-Employed," *National Tax Journal*, vol. LV, No.1, March 2002. Julie Berry Cullen and Roger H. Gordon find in the aggregate that lowering marginal tax rates would lower entrepreneurial activity, but they examine a limited measure of entrepreneurial activity with a limited sample. "Taxes and entrepreneurial risk-taking: Theory and evidence for the U.S.," *Journal of Public Economics*, 91 (2007) 1479-1505. Among the research is Donald Bruce, "Effects of the United States tax system on transitions into self-employment," *Labour Economics* (2000), 545-574. Donald Bruce, "Taxes and Entrepreneurial Endurance: Evidence from the Self-Employed," *National Tax Journal*, vol. LV, No.1, March 2002. Julie Berry Cullen and Roger H. Gordon find in the aggregate that lowering marginal tax rates would lower entrepreneurial activity, but they examine a limited measure of entrepreneurial activity with a limited sample. "Taxes and entrepreneurial risk-taking: Theory and evidence for the U.S.," *Journal of Public Economics*, 91 (2007) 1479-1505.

[18] Carroll, Robert, Douglas Holtz-Eakin, Mark Rider, Harvey S. Rosen, "Entrepreneurs, Income Taxes, and Investment," Working Paper No. 6374, National Bureau of Economic Research, January 1998.

[19] These results suggest a larger tax response for investment by small businesses than that found by Kevin Hassett and R. Glenn Hubbard (2002) for investment generally. Part of the explanation might be that smaller firms are liquidity constrained. Hasssett, Kevin A. and Hubbard, R. Glenn, 2002, "Tax policy and business investment," in A. J. Auerbach and M. Feldstein (ed.), *Handbook of Public Economics*, edition 1 volume 3 chapter 20, pages 1293-1343, Elsevier.

[20] Carroll et al, "Income Taxes and Entrepreneurs' Use of Labor," Working Paper No.6578, National Bureau of Economic Research, May 1998 and *Journal of Labor Economics.* Vol. 18, no 2, pp. 324-351, 2000.

of hiring workers, and, for those with employees, a 3.7-percent increase in the median wage bill. Further evidence that higher tax rates discourage the growth of small business comes from findings that a 10-percent increase in the net-of-tax share leads to an increase in receipts of 8.4 percent.[21]

[21] Carroll et al, "Personal Income Taxes and the Growth of Small Firms," Working Paper No.7980, National Bureau of Economic Research, October 2000.

CHAPTER 4: MAJOR ECONOMIC DISTORTIONS CAUSED BY THE CURRENT SYSTEM FOR TAXING CAPITAL INCOME

A. Introduction

U.S. taxation of capital income distorts a number of economic decisions and hinders the performance of the U.S. economy, lowering saving, investment, real wages, and living standards. This chapter analyzes several of these distortions.

B. Present vs. future consumption

By reducing the after-tax return on saving, taxes on capital income raise the price of future consumption, and so can discourage saving and capital formation. This is the basic distortion caused by the taxation of capital income under our current income tax, to which the corporate income tax contributes. Lower capital formation can be expected to reduce real wages and income because labor has less capital to work with, thereby lowering its productivity.

To understand this distortion, suppose that an investment earns a 10-percent rate of return. Without taxes, the investor receives the full 10 percent. If the investor foregoes $1 of current consumption, he can have $1.10 of consumption a year from now. Suppose next that the government imposes a 25-percent tax rate on capital income. The tax reduces the after-tax return received by the investor from 10 percent to 7.5 percent. The lower rate of return on the investment means that postponing $1 of consumption now yields only $1.075 of consumption in a year's time. Saving (future consumption) becomes less attractive than without the tax, so one would expect less saving and more current consumption.

Furthermore, saving may be undertaken to finance consumption many years in the future. Accounting for this long time horizon magnifies the distorting effects of tax policy changes. For example, with a 10-percent rate of return, $1 of consumption foregone today would yield $2.59 of consumption in 10 years. A tax that lowers the rate of return to 7.5 percent would reduce consumption possibilities in 10 years to $2.06 – a decline of 21 percent, much larger than the 2.5 percent decline that occurs when the savings horizon is a single year. Capital income taxes cascade over time with their deleterious effects amplified by the power of compounding.

It is sometimes thought that taxing capital income rather than labor income has one beneficial effect – avoiding the labor-supply distortions that arise from taxing labor income. This line of thought leads some to see a trade-off between the consumption-timing distortion of capital taxation and the labor-supply distortion of labor taxation. This view is quite mistaken. In general, capital income taxation distorts both labor supply and consumption timing, while labor taxation distorts only the former. It is well understood that a tax on wages reduces the amounts of consumption goods that a worker can buy with his labor earnings, lowering the reward from working and discouraging labor supply. What is less commonly understood is that a tax on capital income, by raising the price of future consumption, also reduces the reward from working to the extent earnings today are saved to fund consumption tomorrow. Thus, because capital taxation retains the labor-supply distortion of labor taxation while adding a new distortion concerning the timing of consumption, capital taxation is more distortionary (except in extreme

cases in which future consumption is far more complementary to leisure than is current consumption).

The impact of capital income taxation on saving depends upon how the revenue is used. If it is used to cut taxes or make transfer payments to the same age groups that pay the capital tax, there is little net income effect. Capital taxation then reduces saving through the disincentive (substitution) effect described above. However, if the revenue is used to cut taxes or make transfer payments to younger people, then there is a net income effect that works against the substitution effect, assuming that the young have a higher propensity to save. So, replacing a wage tax with a capital tax would have ambiguous effects on saving. At the same time, replacing a consumption tax with an income tax (another way of introducing a capital tax) would clearly reduce saving, because the income effect would reinforce the substitution effect as the tax change shifts the tax burden toward the young.

The U.S. tax system is much more complicated than suggested by the simple examples above, and there are substantial uncertainties and complications in measuring the burden that the tax system imposes on "the" return to saving and investing. This is in part because in some cases, a substantial portion of the return to saving and investment is already free of tax. Substantial savings occurs through retirement accounts that afford tax exemption or tax deferral. About one-third of the U.S. stock of tangible capital is owner-occupied housing, the return to which is effectively tax exempt (as discussed below). Accelerated depreciation reduces the tax burden on many business investments below that implied by the statutory rate. The tax system is not fully indexed for inflation; failure to index has an ambiguous effect on tax burdens. U.S. individual taxpayers face a graduated tax rate schedule that imposes very different tax burdens on taxpayers with different income levels. The United States actually has four different tax systems, once account is taken of both the corporate and the individual alternative minimum taxes. Assessing the effects of all these factors on "the" taxation of the return to saving is difficult and uncertain. The result can depend importantly on assumptions about which there can be substantial disagreement.

Despite these difficulties, the economics literature abounds with estimates. One standard approach is the marginal effective tax rate, which is a hypothetical tax rate that, if applied to properly measured income, would have the same incentive effect as implied by the various complicated features of the actual tax code. These stylized calculations attempt to account for taxes imposed on representative corporations and individuals, for accelerated tax depreciation, for the ability to finance investment using a mix of debt and equity, for opportunities to save and invest through tax advantaged vehicles such as retirement savings accounts and owner-occupied housing, and for the absence of indexing for inflation. They typically ignore minimum taxes. Treasury calculations based on this approach suggest that for the U.S. economy as a whole, the marginal effective tax rate on investment is approximately 17 percent (see Table 4.1). This is lower than the statutory tax rate on most forms of taxable income, but substantially above zero, implying potentially large distortionary effects.

Table 4.1: Marginal Effective Tax Rates on New Investment Vary Substantially by Sector

	Effective Marginal Tax Rate
Business	25.5%
Corporate Business	29.4%
Asset type	
Equipment	25.3%
Structures	34.2%
Land	32.9%
Inventories	32.9%
Financing	
Debt financed	-2.2%
Equity financed	39.7%
Non-corporate Business	20.0%
Owner-occupied housing	3.5%
Economy wide	17.3%

Source: U.S. Department of the Treasury, Office of Tax Analysis.

If capital income taxes reduce saving and investment in the U.S. economy, then they also reduce U.S. output and the real incomes and living standards of U.S. households. The burden of capital income taxes likely does not fall exclusively on those who own capital. Rather, workers, or those with primarily labor income, also likely share in the burden of capital income taxes, especially in the long run. To the extent that capital income taxes reduce the stock of capital available to U.S. workers, they also reduce labor productivity and real wages, thereby harming workers. Of course, it may take some time for the stock of capital to decline in response to higher capital income taxes, but to the extent that it eventually does decline, labor shares in the tax burden.

C. Owner-occupied housing vs. business assets

There is a large tax advantage for investing in owner-occupied housing rather than business assets such as plant and equipment. This tax advantage distorts investment decisions by encouraging a larger share of our nation's capital stock to be devoted to the production of housing services than otherwise would occur.

Buying a house in which to live is an investment that offers a return in the form of a flow of housing services. This service flow, called implicit rental income, is not imputed to taxable income and goes untaxed. In addition, home mortgage interest is deductible. As a result, the return from an investment in owner-occupied housing – whether financed with equity or with debt – is not subject to the income tax, in contrast to the return to most business investment,

which is taxed at least once. Even allowing for the possibility of using tax-free vehicles as a funnel for business investment (e.g., pension plans and retirement saving accounts), the tax advantage for housing relative to business assets is substantial – an effective marginal tax rate of 3.5 percent for housing versus a 25.5 percent for business investment (Table 4.1).

D. Corporate equity vs. other investments

The return earned on investments in corporate equity is taxed twice under our current income tax. The return to equity investments in the corporate sector is taxed once under the corporation income tax, and then again under the individual income tax when received by investors as capital gains or dividends.

The double tax on corporate profits creates several distortions. First, it discourages investment in the corporate sector. The combined tax rate on corporate equity is higher than the single level of tax imposed on other business investments and the zero effective tax rate imposed on owner-occupied housing (Table 4.1). The greater tax burden on corporations encourages business owners to choose organizational forms, such as partnerships and certain pass-through entities, which enjoy a single level of taxation but do not have the benefits of limited liability or centralized management found in the corporate structure. Also, investment in inherently corporate industries is discouraged by the double tax.

Second, it encourages over-use of debt. Because corporations can deduct interest expense from taxable income, investors in the corporate sector can escape the corporate income tax by investing in corporate debt. This is illustrated in Table 4.1 by the much higher tax rate for investment financed with equity than for investment financed with debt. Excessive reliance on debt financing increases the rigidity of the corporate capital structure and subjects investors to larger costs associated with bankruptcy and financial distress.

Third, the double tax affects the decision to retain or distribute earnings through dividends or share repurchases. Corporations are discouraged from paying out earnings through dividends to the extent that dividends are more heavily taxed than capital gains generated through share repurchases or retained earnings.[22] The penalty on dividends might lead to over-investment in established firms that are able to avoid the burden of the dividend tax by using retained earnings to fund investments. The tax penalty also might contribute to problems in corporate governance. Dividend payments may improve corporate governance in two ways. First, they may provide a signal of a company's profitability; dividends cannot be paid regularly without underlying profits. Second, dividends limit funds over which hired managers, whose interests differ from those of the firm's shareholders, have discretion. By discouraging dividend payments, the tax penalty on dividends might confound profitability signals and make it less costly for hired managers to invest in projects that offer shareholders low returns.[23]

[22] Even though the maximum tax rate on dividends and capital gains are the same at 15 percent, the effective tax rate on capital gains is generally lower because the tax on capital gains are deferred until realized. Deferral lowers the effective tax rate on capital gains below the 15 percent maximum statutory tax rate.

[23] For a review of research on dividends and corporate governance issues, see Randall Morck and Bernard Yeung. 2005. "Dividend Taxation and Corporate Governance." *Journal of Economic Perspectives* Vol. 19, No. 3, pp. 163-180.

E. Depreciation

The current system of tax depreciation does not ensure that capital income is taxed properly. One problem is that depreciation might not be sufficiently generous to promote desired capital investment for economic growth. Another problem is that depreciation allowances are not adjusted for inflation. In addition, the value of allowances varies across assets in ways that introduce economic distortions. A reason for some of these problems is that the current depreciation system has remained largely unchanged since 1986, and many of its components have been in place since the 1960s.

Inappropriate depreciation deductions lead to capital income tax rates that are lower or higher than intended. In order to measure capital income generated by an asset, it is necessary to allow a deduction for the asset's decline in value as it ages and is used up in production. This decline in value is called economic depreciation. When the depreciation deductions allowed by the tax system equal economic depreciation, the marginal effective tax rate on an investment's return equals the statutory tax rate.[24]

Nevertheless, tax allowances close in value to those implied by economic depreciation do not necessarily promote optimal economic policy goals. As discussed above, taxes on capital income generally have substantial distortionary effects that reduce capital formation, labor productivity, and living standards. One way to eliminate the tax burden on the return to an investment is to allow a full deduction for the cost of the investment (e.g., expensing).

In economic terms, the deduction of the cost of the investment exactly equals the tax on the cash flow from the "expected" normal return on the investment. Thus, the deduction eliminates the tax on this part of the investment return; that is, the return to investment at the margin is fully exempt from tax. However, to the extent the investment yields an amount in excess of the expected normal return – perhaps because of chance, innovation, or successful risk taking – the tax on these above normal returns (i.e., supernormal returns) will exceed the tax value of the initial deduction.

Accelerated depreciation, in which an investment is deducted at a rate faster than economic depreciation, reduces but does not eliminate the tax burden on the return to capital. To illustrate the size of the incentive effects, note that allowing 50 percent of the cost of equipment to be deducted immediately (expensed) rather than depreciated over time would reduce the marginal effective tax rate on corporate equipment from 25 percent to 13 percent.

Regardless of whether one wants accelerated tax depreciation deductions, it would be undesirable for their value to vary with random economic changes, such as changes in the expected inflation rate. To prevent changes in inflation from affecting the value of depreciation allowances, it is necessary to adjust, or index, depreciation allowances so that they rise with

[24] True economic depreciation is very difficult to measure. Nonetheless, at current inflation rates and when averaged across all investments, existing tax depreciation allowances appear to be fairly close to those implied by (existing estimates of) economic depreciation.

inflation over the asset's lifetime. The value of depreciation allowances is quite sensitive to changes in the inflation rate, and failing to adjust for inflation raises the tax burden above what arguably was intended. In addition, without indexing, changes in the inflation rate can lead to capricious changes in the tax burden. Nevertheless, tax depreciation is not indexed for inflation.

The current tax depreciation system does not treat investments uniformly. Some investments, e.g., structures, receive depreciation allowances that are much less generous than those available to other assets, e.g., equipment. As a result of differences in depreciation allowances, corporate structures face a 34-percent marginal effective tax rate, while corporate equipment faces a 25-percent marginal effective tax rate (Table 4.1). Tax differences of this size can result in under-investment in over-taxed assets and the misallocation of capital generally.

Some have suggested that depreciation might be an especially large problem for high-technology, "new-economy" assets. Allegedly, new economic assets wear out much faster than assumed in determining allowable tax depreciation deductions. It is quite plausible that the somewhat dated tax depreciation system gives inappropriate deductions to new technology assets such as computers. It is not clear, however, that inappropriate depreciation deductions are a larger problem for new economy assets than for old economy assets. As noted above, there is little indication that tax depreciation offers uniform incentives across assets from either the "new" or "old" economies.

Several factors limit the degree to which current tax allowances are inadequate to compensate for the decline in the value of new economy assets. First, even if valuation declines have been rapid in the past, they may not remain rapid in the future. Much of the rapid decline in value appears to have been caused by technological obsolescence, and the rate of technical advance could slow. Second, some of the anecdotal evidence in support of rapid depreciation is based on the relatively short period of time that new technology assets are held by their initial purchaser rather than on estimates of the actual economic life of the asset, including use by subsequent owners. Third, the tax code allows an asset to be fully written off when scrapped, regardless of the asset's tax life.

F. Intangible vs. tangible assets

Income from investment in intangible assets (e.g., R&D and advertising) generally receives more favorable tax treatment than does income from investment in tangible assets (e.g., plant and machinery). Investment in intangibles might be excessively encouraged by the tax system, relative to investment in tangible assets.

As discussed above, the cost of purchasing a tangible asset generally is written off (depreciated) over time to compensate for its decline in value due to wear and tear. In contrast, the cost of investment in intangible assets generally is deducted immediately (expensed). Expensing can give a substantial benefit to intangibles over tangible assets. For example, because of expensing, corporate intangibles face an effective tax rate that is close to zero, whereas corporate depreciable assets face an effective tax rate of around 30 percent.

Some R&D spending also is eligible for a tax credit, which can reduce its effective tax rate below zero; that is, taxes actually reduce the cost of making such an investment below what it would have been in a world without taxes. It sometimes is argued that R&D should enjoy a tax advantage to compensate for "spillover" benefits it generates. The argument is that in many cases it is difficult for those investing in R&D to reap the full benefits of their investments. Some of the benefits accrue free of charge; they "spill over" to others who can use the invention without compensating the inventor. It is unclear, however, that the existing research credit is targeted to investments with large spillover benefits or that in general the tax code is the most effective way to encourage economically desirable R&D spending.

G. Inflation indexing

In theory, properly measuring income requires that important items of capital income and expense such as depreciation, interest, and capital gains be indexed for inflation. Otherwise income (real purchasing power) will be misstated.

Consider the treatment of interest. In general, the tax system allows business borrowers to deduct interest and requires lenders to include interest when computing their respective taxable incomes. This treatment is not theoretically correct when there is inflation. Only real interest should be included in the tax base. The nominal interest rate is the sum of the real interest rate and the inflation rate. The inflation component of the nominal interest rate is effectively a return of principal. It holds constant the real value of the loan in the face of an inflationary increase in prices (and reduction in purchasing power of the dollar). Because it is not really an item of expense for the borrower or an item of income for the lender, it should not be deducted by the borrower or included by the lender in determining their respective taxable incomes.

Consider capital gains. Capital gain is the appreciation of an asset's value between when it is purchased and when it is sold. In general, gains upon sale are included in taxable income. This treatment is not appropriate when there is inflation. Part of the gain represents the restatement of the assets' basis (purchase price) in current dollars. Because it is a purely nominal increase in value that does not correspond to an increase in real purchasing power, it should be excluded from the base of an income tax.

In contrast to the logic of proper income measurement, depreciation, interest, and capital gains are not indexed for inflation. This means that the marginal effective tax rate can vary with the inflation rate. The failure to index capital income is a potentially serious problem when the inflation rate is high, as during the late 1970s and early 1980s, but to a much lesser extent in the current low inflation environment. It causes differences in the taxation of alternative investments, erodes the value of some investment incentives, and adds uncertainty to the tax system.

It is less clear, however, that failing to index for inflation necessarily increases taxes on all types of capital income. For example, failing to index interest does not necessarily increase taxes. Whether failing to index interest causes taxes to rise or fall on the return to a debt-financed investment depends on whether lenders face a higher tax rate than do borrowers. If

lenders and borrowers have the same tax rate, then failing to index interest makes no difference – higher taxes paid by the lender are exactly offset by the lower taxes paid by the borrower. Typically, however, borrowers face higher tax rates than do lenders, so that failing to index interest lowers the tax burden on the return to a debt-financed investment.

H. Human capital vs. physical capital

Investment in acquiring skills and abilities shares much in common with investment in more traditional physical assets. Investment in human capital can be thought of as an intermediate input that can be used to produce a final good. Much of the economic cost of acquiring abilities and skills is incurred in the form of earnings that are foregone during the period of training or schooling. Because these foregone earnings are not taxed (i.e., imputed and includable in income), this treatment, in effect, allows an immediate deduction for such investment. Similar to the discussion above on the tax treatment of investment in physical capital, in economic terms, the "deduction" for investment in human capital (i.e., the non-taxation of foregone earnings) equals the tax on the cash flow from the "expected" normal return on the investment, which eliminates the tax on this part of the return (in present value). To the extent that future earnings exceed the expected normal return – perhaps because of luck, innovation, or successful risk taking – the tax on these higher than expected normal returns will exceed the tax value of the initial deduction and would be taxed (in present value).

Investments in physical capital and human capital are treated very differently in our current tax system. Physical capital is typically depreciated over the life of an asset, while human capital is effectively expensed or deducted immediately because of the non-taxation of foregone earnings. This disparate treatment between physical and human capital discourages investment in physical capital relative to human capital. More uniform treatment would reduce this distortion.[25]

The current income tax also offers a number of other incentives for investment in human capital. These include the tax exclusion of scholarships, fellowships, and the value of reduced tuition; education tax credits; deduction of student loan interest; tax advantaged education saving accounts; deductibility and exclusion of employer provided education expenses; deductibility of tuition; and allowing students beyond the normal age cut-off to qualify as eligible children when computing their parents' earned income tax credit and their parents' dependent deduction.

[25] Of course, more uniform treatment could involve either expensing or applying economic depreciation to all investment (i.e., human and physical capital).

I. Towards a more rationale taxation of investment

There are a number of different policy avenues for taxing investment less heavily, each with its own set of inherent tradeoffs. Numerous policy levers influence the cost of capital, such as the corporate tax rate, investor level taxes on dividends, interest and capital gains, how quickly investment costs are written off, and the taxation of income earned in tax-free saving accounts (e.g., retirement and health and education savings accounts). In some ways, each of these methods is similar. They all act to reduce the tax burden on marginal investments, and hence encourage economic growth.

In other ways, however, the approaches can be quite different. One consideration in evaluating these policy levers is the extent to which a particular change provides windfalls to taxpayers because it rewards past decisions. Another consideration is the extent to which a change has large impacts on the market value of firms or assets because new investment is treated very differently than existing capital. These issues are highlighted below by focusing primarily on a stylized comparison of two options: (1) allowing the cost of an investment to be immediately written off (expensed) instead of depreciated, and (2) a reduction in the statutory tax rate, which can be thought of as the corporate tax rate.

Expensing vs. Tax Rate Reductions

Both expensing, or, more generally, faster write-off of investment (i.e., accelerated depreciation), and reductions in the statutory corporate tax rate can reduce effective marginal tax rates on capital income and so encourage investment. Consider first expensing. Expensing reduces the role taxes play in investment decisions by reducing the tax on the investment's return at the margin. Full expensing of investment (e.g., immediate write-off of 100 percent of an investment's cost) completely removes taxes from investment decisions.[26] The value of the deduction in the year the investment is placed in service will exactly offset (in present value) the tax on the expected return on the investment over its life. Partial expensing (e.g., allowing 30 percent of an investment's cost to be written off immediately while depreciating the remaining 70 percent) reduces but does not eliminate the tax burden on a marginal investment.[27]

Expensing does not remove taxes from returns in excess of the normal opportunity cost of funds. The deduction is not sufficient to offset taxes paid on excess returns (e.g., returns associated with economic rents, innovation, luck, and risk-taking). Consequently, moving from current law to expensing would not reduce tax collections from super-normal profits. Importantly, however, taxes on excess returns do not discourage investment, but instead simply transfer some of the pure profit to the government. Overall, full expensing insures that taxes do not discourage investment decisions, regardless of whether the investment offers the possibility of excess returns, while continuing to tax super-normal profits.

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[26] Full expensing of investment is a key component of moving from income taxation to cash-flow taxation at the business level. It is also central to the taxation of investment under several approaches to consumption taxation, such as a subtraction method value added tax and a X-tax, both of which impose a cash flow tax at the business level.

[27] Alternatively, partial expensing can be thought of as a two-tiered tax with full expensing on a portion of the investment and income taxation (i.e., economic depreciation) on the remainder.

It also is important to note that expensing offers tax benefits that are prospective. It offers a tax reduction on the return earned on new investment while offering little or no tax reduction on the return earned on the stock of capital that already is in place. Expensing concentrates its revenue cost on an incentive for new capital formation.

Indeed, without some type of transition relief, switching from depreciation to expensing can place a large tax burden on existing assets. This tax burden could be reflected in a reduction in the value of the stock market. The burden arises in large part from eliminating remaining depreciation allowances on existing assets. Consequently, it can be reduced by allowing existing assets to be depreciated as under the income tax. Such transition relief, however, is expensive to provide and can reduce the attractiveness of expensing as a policy option by increasing the tax rate required under such an option.

Consider now the effects of a reduction in the statutory tax rate, e.g., in the corporate tax rate. This straightforwardly reduces the tax burden on a marginal investment, and so encourages additional investment. To this extent, a rate cut is similar to expensing. In many important ways, however, the effects of a rate reduction are quite different from the effects of expensing. In contrast to faster write-off of business investment or expensing, reducing the corporate tax rate lowers the tax on the *full* return to investment, regardless of whether it exceeds the expected return. In addition, a corporate rate reduction lowers the tax burden on the return from new and old investment alike. By lowering taxes on excess returns and on the returns from investments made in the past, a rate cut spends part of its revenue cost in ways that offer no increased incentive for additional investment. Expensing, in contrast, concentrates its tax break more completely on new investment.

Because a reduction in the corporate tax rate is not restricted to the return from new investment, it would do little to reduce the value of existing assets. Transition relief of the sort that might be required for expensing is not needed for the rate cut. Transition relief is, in effect, automatically provided through a reduction in the corporate tax rate because it reduces the tax on the return to both old and new investment.

"Bang-for-the Buck" of Different Approaches

It is possible to quantify the extent to which alternative approaches to cutting capital income taxes provide an incentive for new investment as opposed to providing windfalls for existing capital. This "bang-for the buck" calculation measures the extent to which a tax change encourages investment per dollar of revenue cost. The more that a policy concentrates it revenue cost on lowering the taxes on the return earned on new investment, the higher is its "bang-for-the-buck."

Table 4.2 ranks several possible policies by their relative "bang-for the-buck". The absolute value of the "bang-for-the-buck" depends on the degree to which investment is responsive to tax changes, but our focus here is on the relative effectiveness of various policies. Consequently, we show in the table the "bang-for-the-buck" of each policy relative to expensing's "bang-for-the-buck."

Not surprisingly, expensing of investment provides the largest "bang-for-the-buck" because it focuses the tax benefit on new investment. In contrast, tax rate cuts have a smaller "bang-for-the-buck" because they reduce taxes on the return from old capital as well as on that from new investment.

Table 4.2: Expensing Provides the Largest for "Bang for the Buck" Among Alternative Investment Incentives

Policy Change	"Bang-for the Buck" Relative to 30% Expensing
30% expensing	100%
Corporate tax rate lowered to 25%	60%
Tax on dividends and capital gains lowered to 10%	60%
Expansion of tax-free savings accounts	65%

Source: Department of the Treasury, Office of Tax Analysis.

Other Domestic Policy Considerations

Of course, there are other considerations at play in evaluating alternative approaches to reforming the taxation of capital income. As discussed above, changes in the market value of existing assets and the possible need for transition relief is one consideration. Some of the policies also address multiple distortions. A reduction in the corporate tax rate or in the tax rates on dividends and gains would help to eliminate the well known tax penalty on income from investment in corporate equities, i.e., the double tax on corporate profits. This would help to equalize the treatment of the return from investment in corporate and non-corporate capital. It also would reduce corporations' tax incentive to retain rather than distribute earnings and to finance investment with debt rather than with equity, and so would help improve corporate governance and reduce the economy's exposure to bankruptcy and financial risk during period of economic weakness.

The Corporate Tax Rate and Cross Border Investment

Multinational corporations have developed a large number of valuable intangible assets such as patents and trademarks that allow them to earn supra-normal or infra-marginal returns on the tangible capital that is necessary to exploit the intangible. The decision on where to locate the production of a particular highly profitable good or service is usually a discrete one in which a certain amount of plant and equipment is required. The decision on how much to invest in any given country therefore is based not only on the effective tax rate on marginal investment, but also on the taxation of the infra-marginal returns.

A U.S. subsidiary abroad has to pay a royalty to the parent company for the use of the U.S. developed intangible. However, the evidence suggests that a substantial portion of the return to the intangible asset remains in the location where it is produced. Furthermore, under

the current U.S. tax system, most foreign royalties are shielded from U.S. tax by excess foreign tax credits flowing from more highly taxed income. Multinational companies therefore have a strong incentive to locate the production of any new valuable products and services in low-tax countries. Lowering the corporate tax rate would make the United States a more attractive location.

The statutory corporate tax rate also determines the extent of the incentive to shift income in or out of the United States. The gain from shifting a dollar of income from one location to another is simply the difference in the statutory tax rates between the two locations. The income shifting may be perfectly legal, for example in the form of placing the enterprise debt in high-tax locations. If a company can shift income to a low-tax country, it is more likely to invest there. Greater investment results in a greater level of transactions which facilitates income shifting. Lowering the U.S. corporate rate would improve choices along both of these margins.

Finally, the U.S. corporate tax rate affects the "competitiveness" of U.S. operations abroad. The U.S. tax on repatriated foreign income is the U.S. rate on the income net of foreign tax credits. (The credits are limited to what the U.S. tax would be.) Lowering the U.S. corporate rate therefore decreases the U.S. tax burden on foreign income.

CHAPTER 5: HOW DOES BUSINESS TAXATION IN THE UNITED STATES COMPARE WITH ITS MAJOR TRADING PARTNERS?

A. Introduction

National business tax regimes vary in numerous respects, which can be classified according to how they affect business activity. Different aspects of the tax system affect the formation of new enterprises, the allocation of capital between the corporate and non-corporate sectors, and the international allocation of capital investment. This chapter focuses on the last of these topics and therefore on corporate tax policy, which is the most relevant to cross-border direct investment.

Several tax measures are used to evaluate the tax burden on the corporate sector, the most common being the statutory corporate income tax rate. Together with depreciation allowances and investor level taxes on dividends and capital gains, the corporate tax rate plays an important role in determining the cost of capital in the corporate sector. Empirical measures such as the ratio of corporate taxes to corporate capital income may also offer insight into the tax burden on the corporate sector. This chapter analyzes and compares the different corporate tax measures for the OECD economies and several large emerging market countries.

B. International comparison of corporate and investor level taxes

Statutory Corporate Income Tax Rates

Statutory corporate income tax (CIT) rates are the most common measure of the tax burden imposed on corporations. The first column of Table 5.1 shows total statutory CIT rates, incorporating subnational taxes, where relevant, for the OECD countries. The United States has the second-highest CIT rate (39 percent) in the OECD after Japan (40 percent). This compares with an average OECD rate of 31 percent.

Table 5.1: The U.S. has the Second Highest Statutory Corporate Tax Rate Among OECD Countries

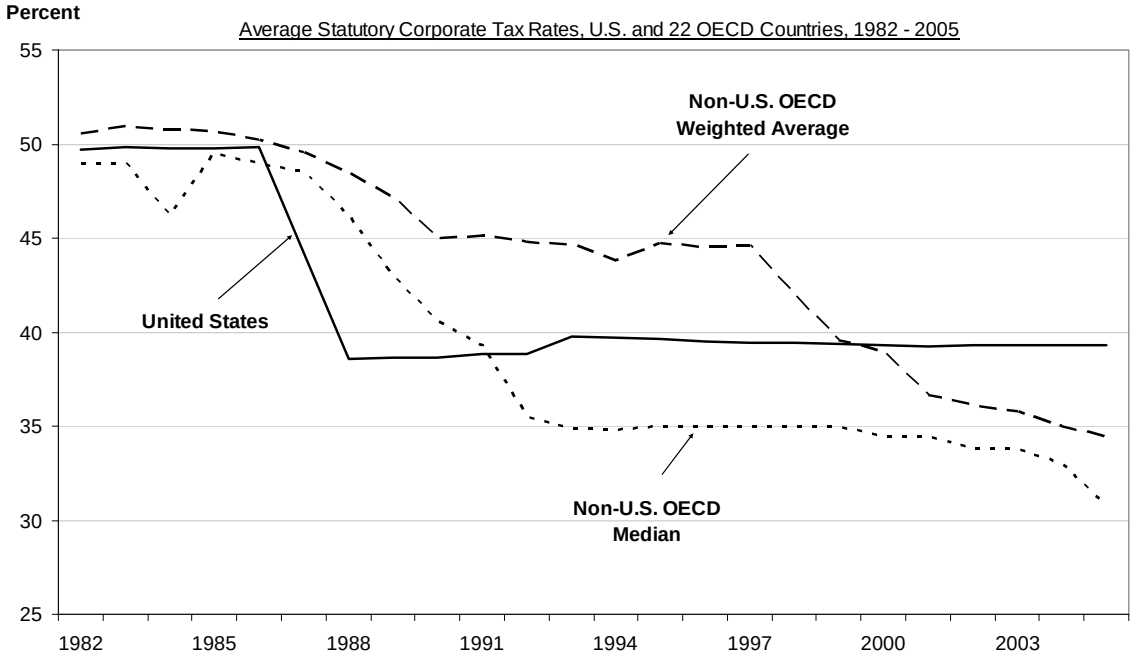
	Statutory Corporate Tax Rate	PDV of Depreciation Allowance - Equipment (Equity)	EMTR Equipment Equity	EMTR Equipment Debt
		OECD Corporate Tax Rates, 2005		
Australia	30%	66%	24%	-23%
Austria	25%	66%	20%	-18%
Belgium	34%	75%	22%	-35%
Canada	36%	73%	25%	-37%
Finland	26%	73%	17%	-23%
France	34%	77%	20%	-36%
Great Britain	30%	73%	20%	-28%
Germany	38%	71%	29%	-37%
Greece	32%	87%	12%	-40%
Ireland	13%	66%	10%	-8%
Italy	37%	82%	19%	-48%
Japan	40%	73%	28%	-40%
Netherland	32%	73%	21%	-29%
Norway	28%	67%	22%	-21%
Portugal	28%	79%	15%	-29%
Spain	35%	78%	21%	-38%
Sweden	28%	78%	16%	-29%
Switzerland	34%	78%	20%	-36%
United States	39%	79%	24%	-46%
OECD Average	31%	75%	20%	-32%
G7 Average	36%	76%	24%	-39%

Source: Institute for Fiscal Studies, www.ifs.org.uk.

Note that CIT rates are correlated with economic size: The average CIT rate for the seven largest OECD economies (the G7) is five points higher than the OECD average, at 36 percent. One reason for this is likely that smaller countries face a more elastic supply of international capital than large countries; that is, changes in their capital imports and exports do not affect world interest rates, so they have a greater incentive than large countries to lower their CIT rates to attract foreign investment. Large countries like the United States, a cut in whose CIT rate would result partly in increased capital inflow and partly in lower world interest rates, have less incentive to cut their CIT rates than small countries. The most relevant comparison for U.S. corporate tax policy is, therefore, to other G7 countries. Nevertheless, as other countries grow faster than the large economies, international capital flows continue to become more relevant to the large economies.

The evolution of OECD corporate tax rates over the past two decades suggests that CIT rate setting is an interactive game subject to the pressures of international competition. Chart 5.1 shows the U.S. statutory CIT rate compared to the overall OECD rate weighted by GDP since 1982. In the early 1980s, the United States had an above-average corporate tax rate of 46 percent. Partly in response to the high U.S. CIT rate, the Tax Reform Act of 1986 lowered the rate to 34 percent, well below the then prevailing OECD average of 44 percent. Average OECD rates trended steadily down over the ensuing decade, while the top U.S. CIT rate was increased to 35 percent in 1993. The average OECD rate fell below the U.S. CIT rate in the mid-1990s and has continued to decline. Now the United States is once again a high corporate tax rate country.

Chart 5.1: The U.S. Corporate Tax Rate Currently Exceeds the Average OECD Corporate Tax Rate



Source: Institute for Fiscal Studies, www.ifs.org, and Organization for Economic Cooperation and Development, unpublished data.

Several factors contribute to the increased competition in corporate tax rates. First, the rapid increase in international capital mobility over the past two decades has made corporate investment more sensitive to relative CIT rates. Capital market integration has been particularly pronounced within the EU, whose members' ongoing CIT reductions are, to some degree, reacting to the low CIT rates in Eastern Europe.

Second, the United States (as well as the United Kingdom and Japan) tax corporate income on a worldwide basis, although the United States allows deferral of taxation on certain unrepatriated earnings. Therefore, foreign countries can effectively tax U.S. (or U.K. or Japanese) corporate subsidiaries up to the CIT rate imposed by their home countries without increasing their overall tax burden, since they would pay any positive difference between their home and host country CIT rates to their home government (when they repatriated earnings).

Finally, increasingly sophisticated tax planning methods, such as the development of debt/equity hybrids and the growth of offshore tax havens, may also be contributing to increased tax competition among OECD countries.

The decline in OECD corporate tax rates continues; in 2008, Germany is expected to cut its total CIT rate from 38 percent to 30 percent. The current governments of the United Kingdom, France, and Japan have also signaled that they may lower their CIT rates.

Effective Marginal Tax Rates (EMTRs)

Statutory corporate tax rates provide an incomplete picture of the corporate tax burden because they do not reflect the corporate tax base nor investor level taxes. Depreciation allowances – the rate at which capital investment costs may be deducted from taxable income over time – are a key determinant of the corporate tax base and an important factor distinguishing the statutory CIT rate from the effective marginal CIT rate (EMTRs). The EMTR combines corporate tax rates, depreciation allowances, and other features of the tax system into a single measure of the share of an investment's economic income needed to cover taxes over its lifetime. This measure of the "tax wedge" between the before- and after-tax returns on an investment is measured relative to the before-tax return.[28]

The EMTR varies depending on the source of finance – debt or equity – because interest is generally deductible, but dividends are not. The corporate discount rate for debt-financed investment, therefore, is lower than the discount rate for equity-financed investment in proportion to the CIT rate; this lower discount rate also increases the present discounted value (PDV) of depreciation allowances for debt-financed investment. In fact, due to interest deductibility and accelerated depreciation, the corporate EMTR on debt-financed investment is negative for all OECD countries, implying a tax subsidy for debt-financed investment. (However, incorporation of individual-level taxes on interest income generally restores taxation of debt-financed investment to a positive rate.) Thus, in addition to affecting the allocation of capital across borders, the corporate tax also affects financing decisions, favoring the use of debt finance instead of equity finance.

Column 2 of Table 5.1 shows the importance of depreciation allowances for explaining differences in corporate tax bases (and EMTRs) for OECD countries. The PDV of depreciation allowances is listed for OECD countries. A PDV of one is equivalent to immediate write-off (expensing) of investment, while a PDV of zero means that investment is non-depreciable. If the rate of tax depreciation equals the rate of economic depreciation (and there is zero inflation), then the EMTR for equity-financed investment equals the statutory CIT rate. Most OECD countries offer some sort of accelerated depreciation for equipment investment, such that their equity EMTRs are lower than their statutory tax rates. In contrast to its high CIT rate, the United States has relatively generous depreciation allowances for equipment, with a PDV of 79 percent; in the OECD, only Greece and Italy have more generous depreciation allowances.

[28] The EMTR is derived from the cost of capital – the rate of return necessary to induce an investment that just breaks even after taxes (King and Fullerton, 1984).

The trend in OECD depreciation allowances over the past two decades has been toward reduced generosity, as countries have at least partially offset CIT rate cuts with corporate base broadening.[29] According to the Institute for Fiscal Studies, the average PDV of OECD depreciation allowances fell from 82 percent in 1980 to 75 percent in 2005. Depreciation allowances among the G7 also declined during the same period, but remained generally higher, falling from 85 percent to 76 percent.

The corporate EMTRs for equity- and debt-financed equipment investment, respectively, for the OECD countries are shown in Columns 3 and 4 of Table 5.1. The U.S. EMTR for equity-financed equipment investment, 24 percent, is above the OECD average of 20 percent, but equal to the G7 average. The U.S. EMTR for debt-financed investment in equipment, -46 percent, is below average for both the G7 (-39 percent) and the OECD (-32 percent). These figures illustrate the divergent influence of statutory CIT rates on equity and debt EMTRs; a higher CIT rate produces a higher equity EMTR but a lower debt EMTR, because the value of the interest deduction increases with the corporate tax rate. The above-average U.S. CIT rate thus contributes to a below-average debt EMTR. Indeed, the United States has the greatest disparity between debt and equity EMTRs in the OECD, possibly resulting in a more pronounced tax bias of financing decisions in the United States than in the OECD.

Emerging Market Countries

Table 5.2 shows the corporate tax rates for three large, emerging market U.S. trading partners: China, India, and Mexico. Their domestic CIT rates are fairly close to the OECD average of 31 percent. However, both China and India levy corporate tax on domestic and foreign investors at different rates. In China, while the total CIT rate on domestic firms was 31 percent (equal to the OECD average), special low rates of 15 to 24 percent were accorded foreign corporations investing in particular sectors and geographic regions. Now subject to WTO rules forbidding discriminatory taxation, China has recently passed legislation that will unify its domestic and foreign corporate tax rate at 25 percent – substantially below the OECD average – but it will continue to offer special tax breaks for investment in particular sectors and regions. India, conversely, taxes foreign investors more heavily than domestic firms; the CIT rate faced by foreign corporations is more than 10 percentage points higher than the 34-percent rate levied on domestic firms. Mexico's statutory rate, 32 percent, is slightly above the OECD average.

[29] Griffith and Klemm (2004) describe this trend of lowering statutory CIT rates while reducing depreciation allowances as designed to attract cross-border investment by profitable multi-national corporations (MNCs); because they usually have significant economic profits, MNCs are more sensitive to statutory CIT rates, which apply to inframarginal income, than to marginal investment incentives. See section on cross-border investment below.

Table 5.2: U.S. vs. Emerging Market Country Tax Rates - 2006

Country	Statutory Corporate Tax Rate		PDV of Depreciation Allowance - Equipment	EMTR Equipment Equity
	Domestic	Foreign	Domestic	Domestic
China*	31%	15-24%	48%	34%
India	32%	45%	51%	36%
Mexico	32%	32%	53%	33%
United States	39%	39%	79%	24%

*Foreign investment in Chinese special enterprise zones is subject to 15% or 24% CIT rate.
China has passed legislation to unify its domestic and foreign corporate tax rates at 25%.
Uniform Inflation Rate (2%)

Source: U.S. Department of the Treasury, Office of Tax Analysis.

Depreciation allowances in the three emerging market countries, which have an average PDV of 51 percent, are markedly less generous than the OECD average of 75 percent. Despite having corporate tax rates roughly equal to the OECD average, the three countries' broad corporate tax bases result in EMTRs that, with an average rate of 34 percent, are well above the OECD average of 20 percent.

Individual-Level Taxation of Corporate Income

Firm-level taxation provides an incomplete picture of the tax burden on corporations because corporate profits distributed in the form of interest, dividends, and capital gains are often subject to a second level of tax at the investor level. Because interest is deductible by the corporation, debt-financed investment is subject to only a single layer of tax at the investor level; however, dividends and retained earnings (which produce capital gains) are not deducted by the corporation, so that equity-financed investment is subject to "double taxation": It is taxed first under the corporate income tax and then again under the individual income tax when distributed to investors as dividends or retained and realized by investors as capital gains.

The importance of investor level taxes for affecting investment decisions depends on the tax rate faced by the marginal investor. If the marginal corporate investor is tax-exempt (such as a pension fund) or a foreigner subject to source-based taxation, then the corporate-level EMTR alone describes marginal investment incentives in the corporate sector. However, if the marginal investor is subject to taxes on corporate interest, dividends, and capital gains, then that layer also needs to be taken into account in calculating the EMTR on corporate investment. Typically, it is assumed that the marginal investor is a weighted average of taxpayers who are tax-exempt and taxpayers who are subject to the investor level taxes.

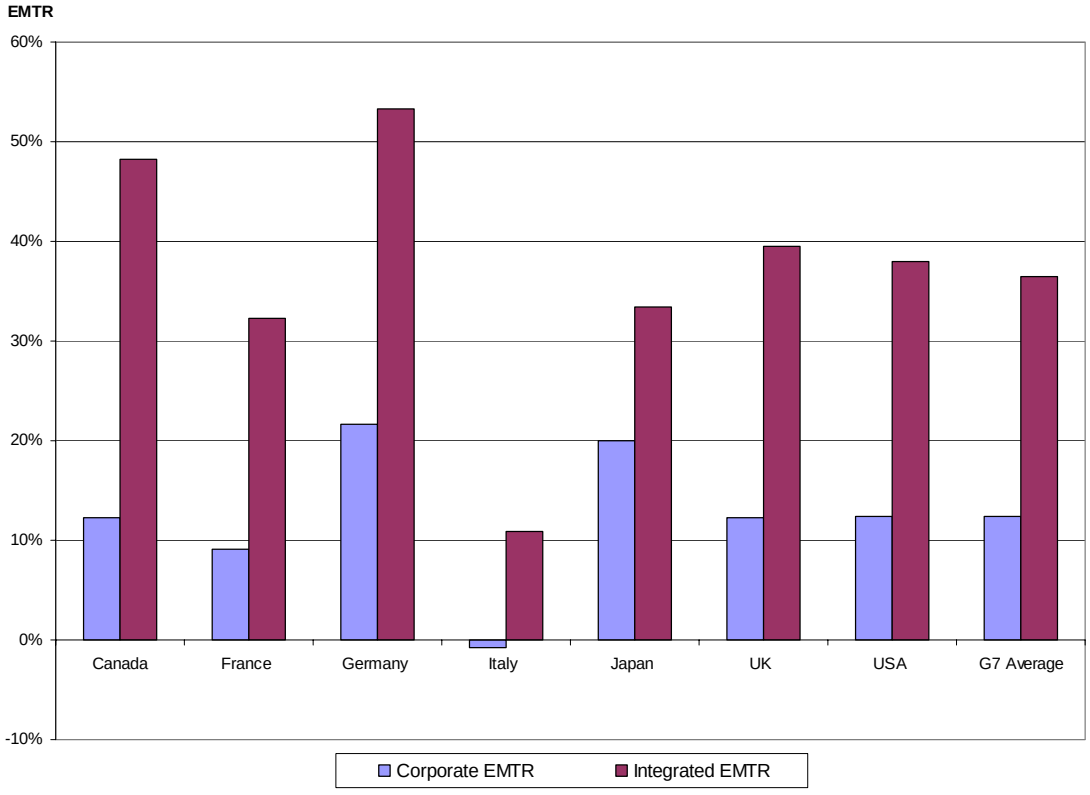
Most countries offer some type of integration scheme to alleviate this double taxation, which usually takes the form of either: (1) reduced tax rates on (long-term) capital gains and dividends; (2) a tax imputation system, which gives the investor credit for part or all of the tax

paid at the corporate level; or (3) a dividend exclusion combined with basis adjustments for corporate income that is retained by the firm. Another increasingly popular method of capital income taxation, sometimes referred to as the "Scandinavian system," is to tax interest, dividends, and capital gains at a single rate well below the top marginal rate on earned income.

OECD countries offering partial or full imputation of dividend taxes include the United Kingdom, Canada, and Mexico. The United States, Japan, and India offer reduced tax rates on long-term capital gains (which the United States currently also applies to dividends), while Germany and France offer a 50-percent exclusion of dividend income. Countries that have adopted Scandinavian systems include Italy and China.

Chart 5.2 shows corporate-level vs. integrated (i.e., corporate- plus investor-level taxes) EMTRs for the G7 countries. The integrated EMTRs are calculated for a taxable domestic investor in the top marginal income tax bracket for an investment financed with one-third debt, one-third new share issues, and one-third retained earnings. The data show that taking investor-level taxation into account can have a significant impact on the calculation of corporate tax rates: Canada, the United Kingdom, and the United States – whose corporate-level EMTRs are average for the G7 – have above-average integrated EMTRs. In contrast, while Japan has an above-average corporate EMTR, its integrated EMTR is below average.

Chart 5.2: G7 Corporate vs. Integrated Effective Marginal Tax Rates, 2006



Note: The estimated EMTRs are for new investment in equipment financed with one-third debt and two-thirds equity.
Source: U.S. Department of the Treasury, Office of Tax Analysis.

Average Tax Rates (ATRs)

Although EMTRs capture the marginal disincentive for corporate investment introduced by taxation, they do not measure the overall portion of corporate income taken as taxes. For this purpose, corporate average tax rates (ATRs) – the ratio of corporate taxes to corporate capital income – are more appropriate. The average corporate tax rate may differ from the general marginal rate for several reasons, including the existence of significant economic profits and various additional corporate tax deductions and credits. The level of tax compliance and enforcement can also cause remittance rates to differ from statutory rates.

The ideal corporate ATR would measure the ratio of total taxes on corporate-source income to corporate capital income ("operating surplus"), or total taxes on corporate equity to corporate profits. Limitations of the OECD tax revenue and national income data, which do not break out individual-level taxes on corporate-source income, only permit examination of a proxy measure: the ratio of corporate-level tax remittances to the corporate operating surplus. The ratio of corporate tax remittances to GDP is also sometimes used as a measure of the corporate tax burden. This ratio can be decomposed into the ratio of corporate taxes to corporate operating surplus – a measure of the tax burden on the corporate sector, multiplied by the ratio of the corporate operating surplus to GDP, a measure of the size of the corporate sector.

Table 5.3 presents these three ratios for a sample of OECD countries. Because empirical tax ratios can be sensitive to the business cycle, average annual ratios for 2000-2005 are presented. The U.S. ratio of corporate remittances to GDP, at 2.2 percent, is below the OECD average of 3.4 percent. This ratio decomposes into the U.S. ratio of corporate taxes to corporate operating surplus (13.4 percent) and the ratio of U.S. corporate operating surplus to GDP (16.7 percent), which are both below the OECD averages of 16.1 percent and 21.6 percent, respectively. Thus it appears that, despite its high statutory CIT rate, the United States takes a below-average share of corporate income in taxes (at least, at the corporate level), and that the United States also has a relatively small corporate sector. The below-average U.S. corporate ATR contrasts with the above-average U.S. statutory tax rate and average EMTR (although above average integrated EMTRs), suggesting that the United States may have a higher than average level of corporate tax preferences.

Table 5.3: OECD Corporate Tax Ratios, Average for 2000-2005

Country	Coporate Tax/GDP	Corporate Tax/Corporate Surplus	Corporate Surplus/GDP
Australia	6.7%	30.5%	21.9%
Austria	2.6%	11.2%	22.9%
Belgium	3.6%	17.1%	21.2%
Canada	3.8%	14.5%	26.3%
Czech Republic	4.3%	15.7%	27.4%
Denmark	3.1%	15.0%	20.6%
Finland	4.3%	16.2%	26.8%
France	3.4%	20.0%	17.1%
Germany	1.6%	7.2%	22.2%
Greece	2.9%	15.0%	19.8%
Japan	3.6%	16.4%	21.4%
Korea	3.5%	14.3%	25.0%
Poland	2.0%	11.3%	18.5%
Portugal	3.4%	17.2%	19.7%
Slovak Republic	2.8%	11.5%	24.4%
Spain	3.2%	16.7%	19.4%
Switzerland	3.0%	14.4%	21.1%
United Kingdom	4.9%	27.7%	17.5%
United States	2.2%	13.4%	16.7%
OECD Average	3.4%	16.1%	21.6%

Source: OECD, www.oecd.org

C. Which is the relevant tax rate for cross-border investment?

Having evaluated several measures of the U.S. corporate tax burden – statutory CIT rates, corporate and integrated EMTRs, and average tax rates – the question remains, which measure is the most relevant for cross-border investment? Devereux and Griffith (2002) posit that because multi-national corporations (MNCs) usually have intangible assets – such as patents or brand names that generate significant economic profits – cross-border investment will be sensitive not only to corporate EMTRs, which affect marginal investment, but also to statutory CIT rates, which apply to economic profits. They construct a composite measure which they call the effective average tax rate (EATR), a weighted average of the EMTR and the statutory rate, where the weight given to the statutory rate depends on the level of economic profits earned by the MNC's investment. EATRs are bounded below by the corporate EMTR and above by the statutory corporate tax rates; therefore, the United States has an above-average EATR.

MNCs also shift taxable income among their countries of operation using various devices, such as transfer pricing and debt. The tax rates relevant to such activity are the relative statutory CIT rates, so the United States should expect MNCs to shift taxable income out of its tax base into lower-tax countries.

D. Conclusion

Relative to other OECD countries, the United States has a high statutory CIT rate and high integrated EMTR, a roughly average corporate EMTR (high for equity, low for debt), and a below-average ATR. The contrast between its high statutory CIT rate and low average corporate tax rate implies a relatively narrow corporate tax base, due to accelerated depreciation allowances, corporate tax preferences, and tax-planning incentives created by its high statutory rate. The high U.S. statutory rate also creates the greatest disparity between debt and equity EMTRs in the OECD, suggesting that U.S. firms have a stronger than average tax bias favoring debt finance over equity finance. Since the relevant rates for cross-border investment and income shifting are the statutory CIT rate and the corporate EMTR, the United States likely experiences some reduction of both foreign direct investment and its corporate tax base due to its above-average CIT rate.

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APPENDIX: THE U.S. SYSTEM FOR TAXING INTERNATIONAL INCOME

A. The current U.S. system for taxing international income: What income does it tax?

The United States has a hybrid system for taxing international income with elements of both a worldwide and territorial system. Generally, domestic corporations are taxed on their income whether earned in the United States or abroad; that is, corporations are taxed on their income on a worldwide basis. However, U.S. parent corporations with foreign subsidiaries are generally not taxed in the United States on the active business income of their foreign subsidiaries until such income is repatriated and distributed as a dividend. Until that income is repatriated, tax is generally deferred. The ability of companies to defer tax until repatriated to the United States substantially lowers the effective rate of tax on such income and moves the U.S. tax system towards a territorial system.[30]

Under the current system, certain types of foreign subsidiary income do not qualify for deferral and instead are taxed when earned, without regard to whether the income is distributed to the U.S. parent. In general, these "anti-deferral" provisions deny deferred taxation on certain categories of foreign subsidiary income, which includes passive portfolio income and the payment of interest, dividends, and royalties from one subsidiary to a subsidiary in another country.

To avoid having the income taxed by both the foreign country and the United States (i.e., double taxation), the U.S parent corporation is allowed a credit against its U.S. tax liability for foreign taxes paid, including a credit for the underlying foreign corporate tax linked to a dividend. This "foreign tax credit" is limited to the amount of U.S. tax would have been incurred if the income had been earned in the United States. The limitation on the credit prevents a host country's foreign taxes if imposed at tax rates higher than the U.S. tax rate from offsetting U.S. tax on income from U.S. sources and thereby diverting revenues from the U.S. Treasury.

Two steps are important in determining the foreign tax credit limitation. First, the foreign income is separated into separate limitation categories, often called "baskets," to restrict cross-crediting, i.e., credits from highly taxed income flowing over to shield lightly-taxed income. Before the American Jobs Creation Act of 2004 (AJCA), there were several baskets, the most significant of which were general non-financial active income, financial services income, and passive income. The AJCA effectively collapsed the baskets into two, active income and passive income, effective in 2007. Within any basket, excess credits generated by one type of income (e.g., dividends) can flow over to other income in the basket (e.g., royalties) and shield that income from any residual U.S. tax.

In the second step of the foreign tax credit limitation calculation, parent overhead expenses such as interest are allocated to each basket to calculate the net foreign income on which the credit can be claimed. This allocation of expenses only affects corporations to the extent that they cannot otherwise credit all the foreign taxes they have paid. If a corporation has

[30] However, because active business income earned abroad is not taxed until repatriated, there is a disincentive to repatriate foreign income. This disincentive is absent from a territorial system that exempts active foreign source income from home-country taxation.

excess credits, the allocation of expenses to foreign income increases U.S. tax by reducing the amount of foreign tax that can be credited in that year. If the corporation does not have excess credits, or is currently not repatriating income, the allocations have no effect on current U.S. tax liability. Allocations of overhead expenses can be very large and can play an important role in the consideration of options to reform the international tax system. Nevertheless, under the AJCA a taxpayer can elect an alternative interest expense allocation formula, which would reduce the required allocations to foreign source income beginning in 2009.

To illustrate these provisions, consider two corporations, A and B, each with a single investment abroad. Corporation A invests in a subsidiary in a low-tax country with a statutory and effective tax rate of 10 percent while B invests in a subsidiary in a country with a 40-percent tax rate. The U.S. statutory rate is 35 percent. Corporation A and B each earn $100 abroad (under both U.S. and foreign income concepts) and repatriate the entire amount and there are no withholding taxes by the host country. Assume first that there are no required allocations of parent overhead expense for the purpose of determining the foreign tax credit. Corporation A has a tentative U.S. tax of $35, but it receives a credit of 10 for foreign taxes paid, leaving a residual U.S. tax of $25. Corporation B has paid $40 in foreign tax but receives a credit of only $35 on its $100 of (grossed-up) foreign income. It has excess credits of $5. These calculations are shown in Columns 1 and 2 of Table A.1.

Columns 3 and 4 show the effect of allocating 10 of parent interest to foreign income when calculating the foreign tax credit limitation. Although each corporation still has the same amount of gross foreign income of $100, their foreign tax credit limitation is now 35 percent of the *net* foreign income of $90, or $31.50. This has no effect on corporation A because it has paid foreign tax of $10. However, corporation B's U.S. tax liability increases $3.50. It reports foreign income of 100 on its U.S. tax return but it receives a credit of only 31.50.

Table A.1: Illustrations of Foreign Tax Credit Calculations

	Corporation A	Corporation B	Corporation A With interest allocation	Corporation B With interest allocation	Corporation A With royalty payment	Corporation B With royalty payment
	(column 1)	(column 2)	(column 3)	(column 4)	(column 5)	(column 6)
1 Foreign source income of sub	100.00	100.00	100.00	100.00	100.00	100.00
2 less royalty	0.00	0.00	0	0	10	10
3 Net foreign source income of sub	100.00	100.00	100.00	100.00	90.00	90.00
4 Foreign tax	10.00	40.00	10.00	40.00	9.00	36.00
5 Interest allocated to foreign income	0.00	0.00	10.00	10.00	0.00	0.00
6 Tentative U.S. tax on foreign source income	35.00	35.00	35.00	35.00	35.00	35.00
7 Foreign tax credit limitation	35.00	35.00	31.50	31.50	35.00	35.00
8 Foreign tax credit (minimum of 4 or 7)	10.00	35.00	10.00	31.50	9.00	35.00
9 Residual U.S. tax (6 -8)	25.00	0.00	25.00	3.50	26.00	0.00
10 Worldwide tax (4 + 9)	35.00	40.00	35.00	43.50	35.00	36.00
11 Excess foreign tax credit (4 - 8)	0.00	5.00	0.00	8.50	0.00	4.50
Tax Rates:						
Low-tax country 10%						
High-tax country 40%						
United States 35%						

Source: U.S. Department of the Treasury, Office of Tax Analysis.

Finally, Columns 5 and 6 show the effect of assuming that $10 of the $100 gross foreign income is in the form of a royalty that is deductible abroad by the subsidiary, rather than a dividend. Nothing changes for corporation A because its foreign tax decreases to $9, which is just offset by the higher residual U.S. tax after the credit of $9. In contrast, corporation B pays less tax. Corporation B saves

$4 of foreign tax because it pays $36 on taxable income in the foreign country of $90. The lower foreign tax has no effect on corporation B's U.S. tax because it can still credit only $35. Therefore, corporation B has a net gain of $4 of reduced worldwide tax liability. In effect, the royalty is not taxed either in the United States or abroad because it is deductible abroad and shielded from U.S. tax by available excess foreign tax credits.

Tabulations of corporate income tax data for 2000 indicate that the U.S. residual tax on corporate "foreign" income was $12.7 billion. Admittedly, this figure does not adequately convey the "true" effective tax burden on foreign income, in part because of the way "foreign income" is defined in U.S. law. Some income produced in the United States can be classified as foreign and some produced abroad can be classified as domestic. In principle, both positive and negative adjustments should be made. The $12.7 billion may overstate the true U.S. tax burden on foreign income to the extent that income is shifted out of the United States and retained in a low-tax jurisdiction abroad. However, the $12.7 billion may understate the tax burden because in 2000, the interest allocations mandated under the U.S. rules were overly strict, effectively classifying some foreign income as domestic and subject to full U.S. tax. The added U.S. tax on income misclassified as domestic should be added to the burden on foreign income.[31] The $12.7 billion measure also does not include "implicit" taxes – the costs corporations bear to avoid the actual tax. An important example is the cost of avoiding the repatriation tax on dividends through various planning strategies. Each of these "unseen" positive and negative components (e.g., income shifting, allocations, tax planning costs) is an important consideration in comparing options for tax reform.

It is useful, nevertheless, to examine the $12.7 billion of revenue to identify the components of foreign income and how they are taxed. Understanding the current taxation of the different components of foreign income helps focus attention on the most important behavioral changes that result from the current system. The data show that a relatively small amount of revenue is accounted for by dividends, at most 15 percent in 2000. Less than half of the tax revenues from foreign income in 2000 – $5.6 billion – was derived from the general, active nonfinancial foreign-tax-credit basket, and only about $1.3 billion of that amount was from dividend repatriations. The remaining $4.3 billion was from royalties, interest received from subsidiaries, and export income. The financial-services basket accounted for $4.6 billion of U.S. tax and of that amount only about $0.3 billion was from dividends. The remainder was split about evenly between tax on the income of unincorporated foreign branches of U.S. banks and interest received directly by U.S. banks on foreign loans. Finally, $2.1 billion of revenue was obtained from the passive basket (and the remaining $.4 billion from the other baskets including the basket for dividends received from foreign corporations owned between 10 and 50 percent by the taxpayer). Most of this $2.1 billion is financial income earned by U.S. controlled corporations abroad that is taxed currently to the parent under the U.S. controlled foreign corporation rules.

Export income and, in particular, royalties in the active basket require further comment. A significant amount of each is shielded from U.S. tax because of excess credits originating from highly taxed dividends. In the case of royalties, this creates a tax incentive to exploit intellectual property such as a patent for a new computer chip abroad rather than in the United States

[31] As indicated in the example above, this is only relevant for corporations with excess credits.

because the returns will escape U.S. taxation. Similarly, the shielding of export income is an export incentive for corporations with excess foreign tax credits.

Tax provisions affecting royalties and the income from intangible assets in general are particularly important because they have become a significant source of foreign direct investment income. The exploitation of parent "know-how" is an important motivation for foreign investment. Data published by the Department of Commerce indicate that royalties and license fees received by U.S. corporations in 2004 were $52.6 billion.[32] Total direct investment income not including royalty income but including deferred income was $233.6 billion in 2004. Tabulations of data from the corporate income tax returns for 2000 indicate that royalties received by U.S. multinational corporations (MNCs) amounted to $45.1 billion or more than 35 percent of total net repatriated nonfinancial foreign income, which is dominated by manufacturing. These royalty payments yielded additional taxes of only $5.8 billion. Almost two-thirds of royalties were shielded by excess foreign tax credits.

B. Alternative criteria for evaluating the worldwide allocation of capital

Several standards have been proposed as guides to international tax policy, such as Capital Export Neutrality (CEN), Capital Import Neutrality (CIN), and Capital Ownership Neutrality (CON). Under CEN, foreign income should be taxed at the home-country tax rate so as not to distort a corporation's choice between investing at home or abroad. Under CIN, foreign income should be taxed only at the local rate so that U.S. corporations can compete with their foreign rivals. Under CON, the tax system should not distort ownership patterns.[33] Each of these criteria is based on a consideration of only a partial view of all the decision margins facing corporations making cross-border investments. For example, each criteria focuses on investment of tangible capital without considering the critical role of the location of intangible capital.

The usual standards that have been proposed to guide policy, such as CEN or CIN, explicitly or implicitly make very special assumptions for which there is very little empirical evidence. One issue is the supply of capital available to U.S. multinational corporations. For example, CEN assumes that all investment by U.S. corporations comes from domestic saving – more correctly from a fixed pool of capital available to the U.S. corporate sector. CIN and CON seem to assume that capital is supplied at a fixed rate by the integrated world capital market. As mentioned above, all three criteria ignore the presence of intangible assets and how they affect the relationship between investments in different locations, or how opportunities for income shifting under alternative tax systems alter effective tax rates in different locations.

Therefore, even if the assumption that an integrated worldwide capital market offers financing to corporations on the same terms irrespective of where they are based is accepted, that is not sufficient to choose the optimal policy. Consider a potential investment in a low-tax location. The question is with what other investments in that or other locations it competes with.

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[32] *Survey of Current Business* (2005).

[33] The concepts of CEN and CIN, introduced by Richman (1963), have been widely discussed in the literature. The CON efficiency benchmark is introduced in Desai and Hines (2003). These standards take worldwide efficiency as the goal. Some have proposed national welfare under the assumption that home governments cannot obtain reciprocal concessions necessary to approximate worldwide efficiency.

Various situations are possible. One extreme example might be a locational intangible, like a fast-food trademark that requires that the corporation produce locally in order to supply its customers. In that case, all competitors compete in the same location and should bear the same (presumably local) tax burden. At the other extreme is a mobile intangible, like the design of a computer chip that can be produced in various locations for the worldwide market. In that case, the competitors for the potential low-tax investment may be in high-tax locations including the United States. CIN and CON implicitly assume the first case, and CEN seems to lean toward the second, where all foreign affiliate production substitutes for domestic U.S. production. For example, CON fits the case of various bidders for an existing asset, with a given product and a circumscribed local market that will not be altered by the transaction. None of the standards proposed fits all cases and tax policy cannot feasibly be calibrated to have different rules for different cases.

C. The behavioral margins affected by the U.S. international tax system

International tax systems can affect many behavioral margins in addition to the choice of location. These include the choice of where to locate intellectual property, the choice of how to finance a given investment, and how much income to repatriate from high-tax and low-tax countries.

The Location of Tangible Capital

There is ample empirical evidence that the location of capital invested by U.S. MNCs is sensitive to variations in effective tax rates among foreign locations.[34] The response of U.S. direct investment to local effective tax rates is large. For example, a typical estimate is that a host country with an effective tax rate 1 percentage point lower attracts about 3 percent more capital. Less empirical work has focused on the role played by repatriation taxes in explaining the distribution of U.S. corporate investment abroad. Grubert and Mutti (2001) and Altshuler and Grubert (2001) use data from corporate income tax returns to explore whether the location decisions of U.S. MNCs are sensitive to residual U.S. taxes. These papers focus on the location of the real assets held abroad in U.S. manufacturing subsidiaries.

Grubert and Mutti (2001) include measures of repatriation taxes in country-level asset location regressions and find that these taxes do not seem to affect the choice among investment locations abroad. They also present evidence on the relevance of repatriation taxes to location decisions derived from firm-level data that include information on the foreign tax credit position of parent corporations. If repatriation taxes play a significant role in parents' decision making, a parent that expects to be in an excess foreign tax credit position should be more responsive to the local tax rate in the host country than a parent that expects to pay a residual U.S. tax. However, the firm-level regressions fail to identify any impact of repatriation taxes on location decisions; parent corporations in excess-credit positions are no more sensitive to differences in host country tax rates than parents without excess credits.

Grubert and Mutti (2001) use the current excess-credit position of the parent to measure prospective repatriation taxes. Altshuler and Grubert (2001) investigate whether alternative

[34] See, for example, Grubert and Mutti (1991), Hines and Rice (1994) and Altshuler, Grubert, and Newlon (1998).

measures of expected credit positions will succeed in identifying an impact of repatriation taxes on location decisions. Most of their attempts to identify the tax sensitivity of firms who expect excess credits to shield any home country tax liability fail to find any excess responsiveness.

Location of Intangible Capital

U.S. direct investment abroad is strongly motivated by the exploitation of intangible assets such as patents and trademarks. As discussed in the previous section, the ability to shield taxes on royalties and income shifting opportunities creates an incentive to exploit intangible assets abroad. Even though part of the return on intangibles is paid as deductible royalties, the evidence suggests that the foreign subsidiary retains a significant portion, which means that a low-tax jurisdiction is a favorable potential location.

There is little empirical evidence on the impact of taxes on the location of intangible capital. Although the returns to intangible assets are not fully captured in royalties, these payments can be used as an indication of where intangible assets are being invested. Data from the Bureau of Economic Analysis (BEA) Benchmark Surveys of U.S. Investment Abroad in 1994 and 1999 suggest that low-tax countries are becoming much more important destinations for U.S. produced intangible assets.[35] Specifically, the share of total affiliate royalties accounted for by Ireland and Singapore doubled between 1994 and 1999. The share of total royalties paid by subsidiaries in these locations increased from 9.3 percent to 20.9 percent, and the share of royalties paid to the U.S. parent increased from 8.4 percent to 19.6 percent. In 1999, royalties paid by Irish affiliates exceeded royalties paid by German or United Kingdom affiliates, and total royalties paid by Singapore affiliates were only 25 percent lower than royalties paid by Japanese affiliates.[36]

Repatriation Planning and the Implicit Cost of the Repatriation Tax

The repatriation tax on dividends does not impose much of a direct burden on foreign investment in the form of actual payments to the U.S. Treasury. In the 1990s, only about 6 percent of the income in low-tax countries with average effective tax rates below 10 percent was repatriated per year. In these locations, the burden of actual payments was 2 percent to 3 percent of affiliate income. Nevertheless, the repatriation tax may impose a large "implicit" burden on the corporations in the form of increased planning costs and foregone investment opportunities. Evaluating this implicit cost is very important in considering reform proposals such as dividend exemption. It indicates both the possible efficiency gain if corporations' dividend behavior is not distorted, and also the changes in the location of capital and income that it might trigger.

[35] See Altshuler and Grubert (2004) for further discussion.

[36] Detailed data on royalty payments by subsidiaries from the 2004 BEA Benchmark Survey are not yet available. The U.S. Direct Investment data published annually in the Survey of Current Business, however, does contain information on royalty payments from U.S. affiliates to U.S. parents. The story has not changed. Ireland and Singapore account for almost 20 percent of total royalties. Royalties from Irish affiliates remain larger than those from German and United Kingdom affiliates, and royalties from Singapore affiliates are still significant relative to those from Japanese affiliates (royalties paid from Singapore affiliates are about two-thirds as large as those paid by Japanese affiliates).

U.S. corporations have a number of techniques that they can use to avoid the repatriation tax on dividends while still getting cash into the hands of the parent. One is for the parent to borrow against the passive assets retained abroad, with the only proviso that the assets are not used as formal collateral. The potential lender will know about the pool of passive assets abroad that can be claimed in the case of financial distress. In addition, multinational corporations can engage in triangular strategies in which a low-tax subsidiary effectively borrows tax credits from a high-tax sister corporation. There are also more exotic methods for magnifying the foreign tax credit relative to the income being repatriated.

Evaluations of the implicit burden of the repatriation tax using dividend repatriation equations, which indicate corporations' willingness to pay dividends depending on the amount of the residual U.S. tax, have yielded relatively modest estimates – less than 2 percent of subsidiary pre-tax income even in low-tax locations.[37] The sum of the actual tax burden and the implicit burden is therefore about 4 percent of income in low-tax locations.

Furthermore, comparisons of the behavior of corporations with and without excess foreign tax credits suggest that the repatriation tax must not be imposing a significant burden. Corporations with excess credits would incur no additional U.S. tax from paying low-tax dividends. It is very difficult to identify any consistent effect of the repatriation tax on location choices. In contrast, the local host country effective tax rate is very significant. Furthermore, the two groups of corporations do not seem to differ in their income shifting behavior. The disparity in profitability between high and low-tax countries is about the same.[38]

Nevertheless, the reaction of corporations to the recent 1-year window when they could repatriate and pay only a 5.25-percent tax (before a scaled down credit) might indicate a higher burden. The additional repatriations were very large, in the range of $200 billion. After credits, the U.S. tax on these dividends from low-tax countries would have been about 4.0 percent. The burden of the repatriation tax on investment in low-tax locations might, therefore, be somewhat higher than the 4.0 percent of pre-tax income previously estimated.

[37] Grubert and Mutti (2001) and Desai, Foley and Hines (2001).
[38] Grubert and Mutti (2001) and Altshuler and Grubert (2001).

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