CHAPTER 3

Pro-Growth Tax Policy

The word "investment" has different meanings to different people. In finance, investment means the purchase of financial products or other assets, such as mutual funds or gold, with an expectation of favorable future returns. For businesses, it can mean the purchase of a physical good, such as a durable machine or inventory, with the hope of improving future business. In economics, investment is defined as any use of resources intended to increase future production output or income. In particular, capital investment is money spent on physical capital such as buildings, equipment, or machinery, or on human capital such as education or job training. Because a larger capital stock makes labor more productive, investment is a primary driver of greater economic growth and higher standards of living.

If governments pursue policies that involve the least amount of government interference necessary for a well-functioning capital investment market, this will encourage an efficient amount of investment. One type of policy that is key to encouraging an efficient level of investment is *pro-growth tax policy.* One of the goals of pro-growth tax policy is to finance government services in a way that minimizes the effect of taxes on the capital investment decisions of households or businesses. By taxing investment returns too heavily or by providing tax advantages to certain types of investment, a tax system can discourage overall investment, as well as prevent capital from being used efficiently. A tax system that affects investment decisions in these ways is called "distortionary" because it creates incentives for people to base their saving and investment decisions on taxes, rather than making those decisions based solely on where they can use their resources most productively.

This chapter discusses the advantages of adopting a more pro-growth tax system. It reviews recent changes that have reduced tax distortions on capital investment decisions, and evaluates options to further reduce such distortions. It draws the following four main conclusions.

- The goal of pro-growth tax policy is to reduce tax distortions that hamper economic growth. Most economists agree that lower taxes on capital income stimulate greater investment, resulting in greater economic growth, greater international competitiveness, and higher standards of living.
- The current tax code contains provisions that discourage investment and create distortions that affect the level, structure, and financing of capital investment. These distortions dampen capital investment and contribute to an inefficient allocation of capital throughout the economy.

- Estimates from research suggest that removing these tax distortions to investment decisions could increase real gross domestic product (GDP) by as much as 8 percent in the long run.
- Since 2001, temporary changes in the tax code have reduced the tax on investment. These pro-growth policies have stimulated short-run investment and economic growth. However, the temporary nature of the provisions eliminates desirable long-run economic stimulus.

Rationale for Pro-Growth Tax Policy

All societies must decide on the amount of government services that best provides for the welfare of the citizenry. When deciding how to finance a given amount of government services, two features of the tax system must be determined—the appropriate tax base and the appropriate tax rate. The goal of pro-growth tax policy is to define a tax base and choose tax rates that finance government expenditures with the least distortionary effect on the economy. A tax system is distortionary when it creates incentives for people to make spending, saving, or investment decisions that are different from the decisions they would make in the absence of taxes. For example, by taxing the sale of apples and not oranges, a tax system would encourage people to consume more oranges and fewer apples than they otherwise would. Similarly, by taxing a family's out-of-pocket health spending but not employer-paid health insurance premiums, the tax system encourages inefficient consumption of health care by households. (See Box 4-1 in Chapter 4, The Fiscal Challenges Facing Medicare, for a discussion of the President's proposal to reform the tax treatment of health insurance.) By comparison, a tax system that taxes investment can create incentives that favor consumption over saving, investment in certain types of capital over others, or certain methods of financing capital investment. In the absence of distortionary taxes, people would have made those decisions based solely on the best and most productive use of those resources.

Defining the Tax Base

Most economists agree that the choice of the appropriate tax base is between taxing some measure of income or taxing some measure of consumption. Broadly defined, *income* is the increase in an individual's ability to consume during a period of time. Income can include labor earnings (both cash and benefits), interest payments, rents, royalties, dividends, increases in asset values, alimony, and pension payments. An important dimension of income taxation is that saving and investment are included in the tax base. Using income as the tax base is equivalent to taxing *potential* consumption. In effect,

this taxes all resources that people *put into* the economy. A tax system with an income base is distortionary because taxes affect decisions on when, how, and how much to save and invest. For example, in taxing household saving, future consumption (financed by saving) becomes relatively more expensive compared to current consumption. As a result, households tend to consume more and save less than they otherwise would if saving were not taxed.

By contrast, consumption is defined as the *actual* amount that people and businesses spend buying goods and services today. When a tax system has a consumption base, it only taxes what people *take out* of the economy. While there are several possible measures of a consumption tax base—retail sales, value-added, and consumed income, among others—all of these measures share the attribute of excluding saving and investment from the tax base. Such a tax system is considered "neutral" and efficient because it neither encourages nor discourages savings and investment decisions; it allows people to decide whether to consume now or to invest in the future based on market prices instead of on how to avoid paying taxes. Relative to an income tax, the consumption tax base results in a larger, more efficient stock of capital, which in turn makes workers more productive. Output and wages rise, resulting in higher standards of living. As a result, many economists feel that consumption is a better base for pro-growth tax policy.

Our current tax system has a hybrid tax base, with elements of both income and consumption tax bases. Some, but not all, of the return to saving and investment is excluded from the tax base through various provisions. For example, individual retirement accounts (IRAs), employer-sponsored retirement savings plans, lower tax rates on capital gains and dividends, and accelerated depreciation for certain types of investment are some of the provisions in the current tax code that provide at least a partial consumption tax base. Recent estimates suggest that about 65 percent of the return to household financial assets is taxed under an income tax base, with the remainder receiving consumption tax treatment.

Choosing the Tax Rates

A marginal tax rate tells how much tax is paid on an additional, or *marginal*, dollar of income. When assessing the effect of marginal tax rates on investment, it is the effective tax rate rather than the statutory tax rate that matters. A *statutory marginal tax rate* is a legal definition of the amount of extra income needed to pay taxes due from an additional dollar of taxable income in any year. By contrast, an *effective marginal tax rate* estimates the extra share of the total return from an investment needed to cover tax liabilities over an investment's useful life. A tax system with high effective tax rates on labor and capital income will dampen economic growth by reducing incentives to work and invest in capital formation.

Pro-growth tax policy, whether through adopting a consumption base, lowering statutory tax rates on saving and investment, or allowing individuals to fully deduct the cost of investment from taxable income, stimulates new investment by lowering the effective tax rate on investment income. Individuals and businesses will undertake more projects because lowering the effective marginal tax rate reduces the pretax rate of return necessary to make new projects profitable. In addition, lowering the effective tax rate on the return to capital investment enhances the competitive position of the United States in today's increasingly global economy. This is because a lower effective tax rate raises the after-tax return to U.S.-based investment relative to foreign investment, making U.S. investment relatively more attractive to both domestic and foreign investors.

The U.S. Tax System— Previous Distortions and Recent Reforms

The United States tax system has become increasingly distortionary and inefficient, with hundreds of highly targeted tax provisions that erode the potential for tax system neutrality and greater economic growth. A major source of inefficiency is the treatment of capital investment, both for physical capital and for human capital. The profusion of provisions has resulted in a system where taxes can be the primary determinant in whether to undertake new investment, what form the investment should take, and how to finance the investment.

Since 2001, several pro-growth tax policy changes have been enacted which have reduced the distortionary effect of taxes on investment decisions. This section discusses investment distortions in the tax system prior to 2001 and analyzes how changes since that time have reduced distortions and stimulated economic growth. Overall, the pro-growth policies enacted since 2001 have helped lessen the impact of the recession and have led to greater investment and overall economic growth.

Tax Treatment of Physical Capital Investment

This section discusses how two features of the tax system result in "tax wedge" distortions that contribute to physical capital investment inefficiency: depreciation schedules that result in an inefficient level and allocation of capital, and the double taxation of corporate profits that affects the level, form, and financing of business investment.

The Tax Wedge

The tax system creates a "tax wedge" for investment, making the pretax return on investment higher than the after-tax return on investment. This is important because investors require the pretax return to cover both the opportunity cost and the tax cost of investment. If the tax wedge is large, fewer projects will be undertaken because the after-tax return for some projects will be below the opportunity cost of investment. For example, consider an investment with a pretax return of 10 percent and an after-tax return of 7.5 percent, meaning the tax wedge is equal to 25 percent of the pre-tax return. If investors decide they require an 8 percent after-tax return in order to cover the opportunity cost of the investment, taxes will stop the otherwise profitable project from being undertaken. By lowering the effective tax rate on investment, the pretax return is unaffected but the after-tax return will rise. For example, if the effective tax rate is reduced to zero, then the tax wedge is eliminated and the after-tax return rises to 10 percent. Note that the tax wedge does not need to be eliminated for our hypothetical project to be financed—the effective tax rate only needs to be reduced to the point where the after-tax return is 8 percent. However, completely eliminating the tax wedge removes taxes from the investment decision. Two main contributors to the tax wedge on investment returns are depreciation schedules and the double tax on corporate profits.

Depreciation Schedules

A primary source of the inefficiency created by the tax wedge is the depreciation schedules that treat investments very differently depending on their business sector, asset life, and source of financing. *Depreciation schedules* tell how much of an investment's acquisition cost can be deducted from the taxpayer's taxable investment income in any year. There are two distortions associated with the tax depreciation system. First, spreading the deduction for the acquisition cost over a number of years lowers the present value of the total tax deduction relative to fully deducting the cost in the year purchased. By lowering the present value of the deduction, the depreciation system raises the tax cost and the total effective cost of investment. This makes some projects unprofitable and reduces the economy-wide level of investment. Second, the depreciation system distorts the allocation of investment among various sectors of the economy because the depreciation schedules lead to sectoral differences in effective marginal tax rates. Under an income tax system, the amount of investment cost counted each year should ideally equal the true economic depreciation of the asset. For example, if an asset loses 10 percent of its useful value per year, then an ideal income tax depreciation schedule would allow 10 percent of the cost to be excluded from income each year. When tax

depreciation is not the same as economic depreciation, the tax system distorts investment decisions regarding the allocation of capital investment.

A common method of measuring the relative distortions caused by the depreciation system is to calculate the effective marginal tax rates on different types of investment. Under current law, different types of investments are depreciated under various depreciation schedules ranging from 3 to 39 years. Because acquisition costs are deducted from taxable income at different rates, the amount of tax paid—and the effective marginal tax rate—varies by depreciation class. Table 3-1 shows the effective tax rates on different assets for different types of investments, with computer investment facing the highest effective marginal tax rate and petroleum infrastructure investment facing the lowest. Because marginal investments should provide the same after-tax rate of return, the depreciation schedule distorts the allocation of capital by discouraging investment in assets with high effective marginal tax rates.

Even if we adopted a tax system with tax depreciation equal to economic depreciation, there would still be a notable tax wedge that would distort investment decisions. To completely remove the investment distortions of depreciation schedules would require adopting a consumption tax base. With a consumption tax, all investment costs are fully deducted (fully expensed) from taxable income in the period in which the acquisition occurs. This has the effect of reducing the tax wedge to zero if there are no other taxes on investment returns. This means that the tax system is neutral to the level and allocation of capital investment because taxes do not affect the decision to invest and all types of investment are treated equally.

The Double Tax on Corporation Profits

The double tax on corporate profits—which is inconsistent with either an income tax or a consumption tax—also has a pronounced effect on investment

TABLE 3-1.— *Effective Marginal Tax Rates on Capital Income of Corporations by Asset Type*

Asset type	Effective marginal tax rate (%)
Computers and peripheral equipment	36.9
Inventories	34.4
Land	31.0
Automobiles	29.7
Educational buildings	28.4
Residential buildings	23.8
Medical equipment and instruments	20.4
Light trucks (incl. utility vehicles)	18.2
Household appliances	17.5
Aircraft	14.5
Railroad equipment	11.4
Petroleum and natural gas structures	9.2

Source: Congressional Budget Office.

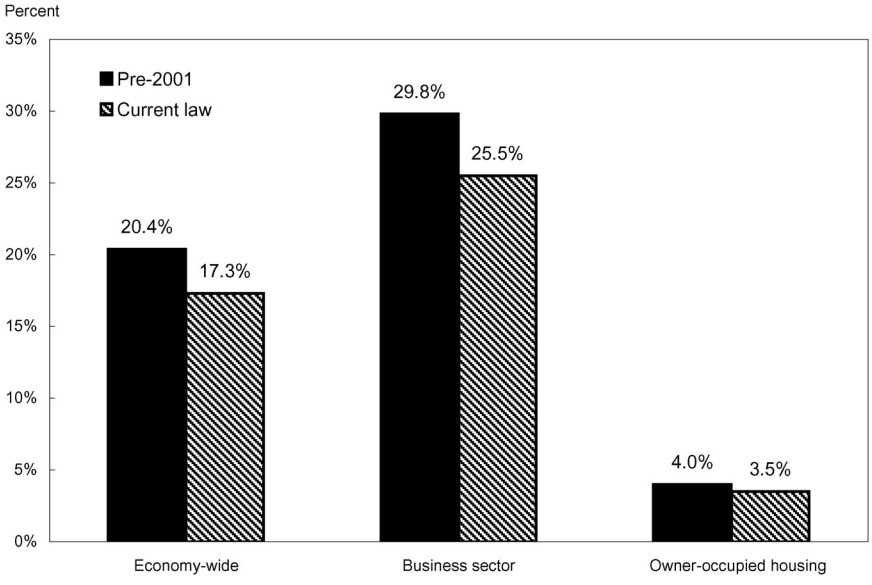
decisions. First, corporations pay tax on net corporate earnings at a maximum marginal rate up to 35 percent. Second, individual investors are taxed on the returns they earn on corporate equity. These returns can take the form of a *capital gain*, the difference between the purchase price and the sale price of an asset, or a *dividend*, which is a share of corporate profits distributed to shareholders after corporate income tax has been paid.

The total tax on corporate income is calculated by combining these two layers of tax. Prior to 2001, the tax on individual investment returns (capital gains and dividends) created incentives for investors to favor projects that paid returns in the form of capital gains or interest payments instead of dividends because long-term capital gains were taxed at a maximum statutory rate of 20 percent, while dividend payments were subject to a maximum individual statutory rate of 39.6 percent (both tax rates do not take state and local taxes into account).

For corporate income distributed to shareholders as dividends, the double tax on corporate profits could approach the level of confiscation. For example, given a maximum statutory marginal tax rate of 35 percent for corporations and 39.6 percent for individuals, the combined effective marginal tax rate on distributed corporate profits could have been as high as 61 percent! Instead of paying out corporate profits as dividends, a corporation could retain and reinvest the after-tax profit, leading to an increase in its stock value. Prior to 2001, when a long-term capital gain was realized, the combined effective tax rate on corporate profits was about 42 percent, after accounting for the deferral of tax on the accrued gains. All else equal, investors tended to favor investment returns in the form of capital gains.

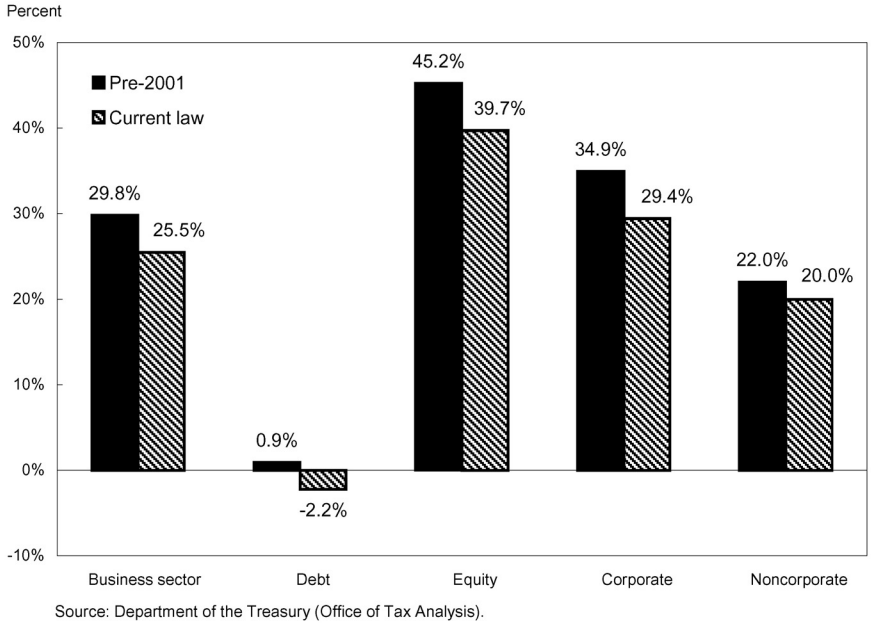
The high effective tax rate on equity-financed investment also created incentives that favored debt (taking out loans or issuing bonds) when financing new projects. As shown in Chart 3-1, while the economy-wide effective tax rate prior to 2001 was 20.4 percent, the effective tax rate on business sector investment was 29.8 percent. Chart 3-2 shows that the effective tax rate on equity-financed investment was 45.2 percent and the effective tax rate on debt-financed investment was almost zero. The reason for this large difference in effective rates is that corporations can deduct interest payments for loan and bond payments from taxable income, but must include dividend payments and retained earnings in taxable income. Individual investors then must pay taxes on the interest payments from their debt holdings and the investment returns (capital gains and dividends) from their equity holdings. This tax treatment results in a system where the return to corporate debt is taxed once but the return to corporate equity is taxed twice. The resulting overreliance on debt-financed investment could lead to greater bankruptcy risk during temporary industry or economy-wide downturns, as well as to a misallocation of resources in the economy.

Chart 3-1 **Effective Marginal Tax Rates on New Investment**
New investment can face highly disparate tax treatment depending on the sector.



Source: Department of the Treasury (Office of Tax Analysis).

Chart 3-2 **Effective Marginal Tax Rates on New Business Investment**
Tax treatment of new investment in the business sector varies by type of financing.



Source: Department of the Treasury (Office of Tax Analysis).

Tax Treatment of Human Capital Investment

Human capital investment (such as education and worker training) is an important input in the production of final goods and services, and investing in human capital is a cost of earning income. Prior to 2001, the tax treatment of education and training expenses was mixed. Some costs were fully deducted against taxable income, while others were subject to varying degrees of taxation. In addition, the treatment varied depending on whether the investment was paid for by businesses or households.

At the household level, most human capital investment was fully deducted because the tax system does not tax the opportunity cost of education—the foregone wages of working instead of attending school. For other human capital investment costs, there was a complicated set of rules, with the tax treatment primarily determined by the income of the individual taxpayer undertaking the investment. Some costs could also be deducted under both income and payroll (Social Security and Medicare) taxes.

The opportunity cost of working was fully deductible under both the income and payroll tax. Other costs fully deductible under both taxes were scholarships, fellowships, and reduced tuition. Costs that were fully deductible under just the income tax included education costs paid through Coverdell Education Savings Accounts (Coverdell ESAs), interest payments on student loans, and Treasury bond interest. These costs were excluded from income tax so long as they were used for tuition and related expenses such as fees, books, supplies, and the equipment required for courses of instruction.

At the firm level, human capital investment received more efficient tax treatment than physical capital investment. Consider a $50,000 investment in office equipment. For many businesses, this cost was not fully deductible. Instead, the cost was recovered through depreciation provisions, with a fraction of the cost deducted from taxable income over a 7-year period. Alternatively, the firm and workers could have agreed to reduce cash compensation by $50,000 and invest the money in job training. In this case, the firm would have deducted the cost of training from taxable income as an ordinary business expense and workers would not have claimed the cost as taxable income for income or payroll taxes. In this way, the investment cost was fully deductible in the year the training occurred, resulting in no tax distortions to the firm's human capital investment decision.

In addition to allowing partial deductibility of human capital investment, the tax system had two human capital investment tax credits available for use by households. In 2000, the Hope credit provided a tax credit of up to $1,500 per eligible student for the first 2 years of post-secondary education. To qualify for this credit the student had to be pursuing a degree or other recognized educational credential. The Lifetime Learning credit provided a tax credit of 20 percent of the first $5,000 in household education expenses per

year. This credit was available for any post-secondary education investment for an unlimited number of years, regardless of whether the student was pursuing a degree or educational credential.

Tax credits differ somewhat from tax deductions. A *tax credit* directly reduces the amount of tax you have to pay. By contrast, *tax deductions* reduce the amount of income subject to tax. Tax credits can provide investment incentives that are equivalent to partial or full deductions and can also be more generous than full deductions. For example, consider a person who has qualified education expenses of $5,000 and receives a $1,000 Lifetime Learning credit. If this person is paying taxes at a 20 percent effective marginal tax rate, then the credit is equivalent to being able to fully deduct the education cost from taxable income. If the person is paying taxes at a higher marginal tax rate, then the credit is equivalent to a partial deduction. For example, if the student is paying tax at a 31 percent marginal tax rate, then the credit is equivalent to being able to deduct about $3,200 of the investment cost. Similarly, if the student is paying tax at less than 20 percent, then the credit provides more than a full deduction (i.e., a tax subsidy).

Overall, the tax system in place prior to 2001 can be characterized as relatively inefficient with respect to investment in physical and human capital. Changes to this system were and are still necessary to eliminate distortions that keep the economy from reaching its full potential.

Pro-Growth Changes Since 2001

A number of pro-growth tax initiatives have been proposed and signed into law by President Bush since 2001. The initiatives enacted include provisions aimed at reducing the double taxation of corporate profits by lowering the tax rate on dividends and capital gains; temporary bonus depreciation; expansion of deductibility of higher education costs; and several smaller provisions aimed at encouraging investment. Taken together, these reforms reduced the effect of taxes on investment decisions.

Reducing the Double Tax on Corporate Profits

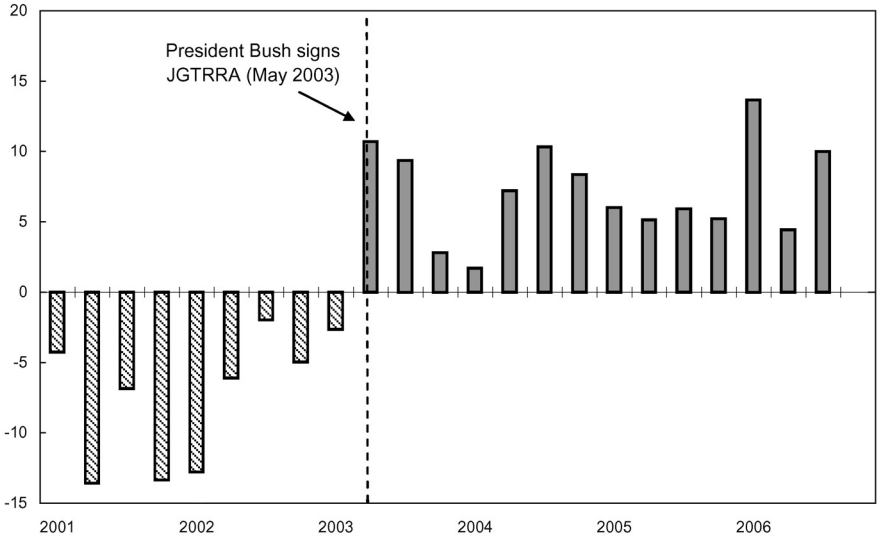
The Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), proposed and signed by President Bush, reduced the double tax on corporate profits by lowering the top individual tax rate on dividends and capital gains to 15 percent through 2008. These changes promoted economic growth by increasing capital in the corporate sector and improving the allocation of capital throughout the economy. As shown in Chart 3-3, in the 9 quarters preceding JGTRRA, real private nonresidential investment fell at an average annual rate of about 7.5 percent and annual real GDP growth averaged 1.1 percent. In the 13 quarters after JGTRRA was enacted, real private nonresidential investment grew at an average annual rate of about

6.9 percent, with annual real GDP growth averaging 3.6 percent. While it is too early to estimate the full effect of pro-growth tax policy on GDP, recent estimates suggest that without the tax cuts the economy would have had as many as 3 million fewer jobs and real GDP would have been as much as 3.5 to 4 percent lower by the end of 2004.

Several studies indicate that prior to JGTRRA, corporations had been steadily reducing dividend payments. The reason is that the tax system resulted in a strong tax bias in favor of retained earnings and capital gains. Since passage of JGTRRA, there has been an increase both in the average amount of corporate dividend payments (Chart 3-4) and in the percent of firms paying dividends (Chart 3-5). Reducing the double tax on corporate profits also slightly reduced tax-motivated incentives for debt finance because it reduced the effective marginal tax rate on equity finance. As seen in Chart 3-2, the effective marginal tax rate on equity-financed corporate investment is now about 40 percent, a drop of about 12 percent from the pre-2001 effective tax rate. While this rate is still substantially higher than the effective tax rate on debt-financed corporate investment, the relative reduction reduced the distortion between debt and equity finance.

A major challenge facing this pro-growth change is the impermanence of the capital gains and dividend tax reductions. Originally scheduled to expire at the end of 2008, both provisions were recently extended until the end of 2010 in the Tax Increase Prevention and Reconciliation Act of 2005 (TIPRA). For

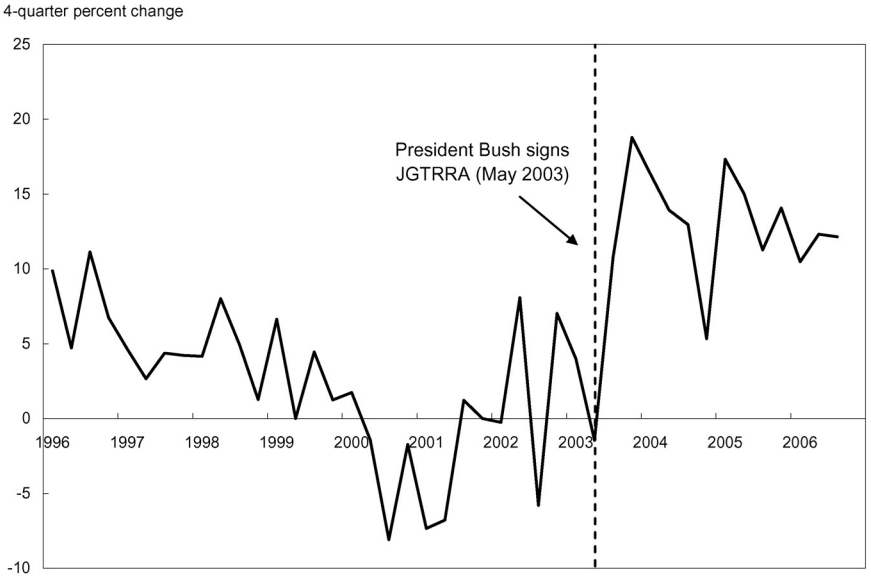
Chart 3-3 **Real Private Nonresidential Fixed Investment**
In the 13 quarters after the President signed JGTRRA into law, real private nonresidential investment grew at an average annual rate of 6.9 percent.
1-quarter percent change (annualized)



Source: Department of Commerce (Bureau of Economic Analysis).

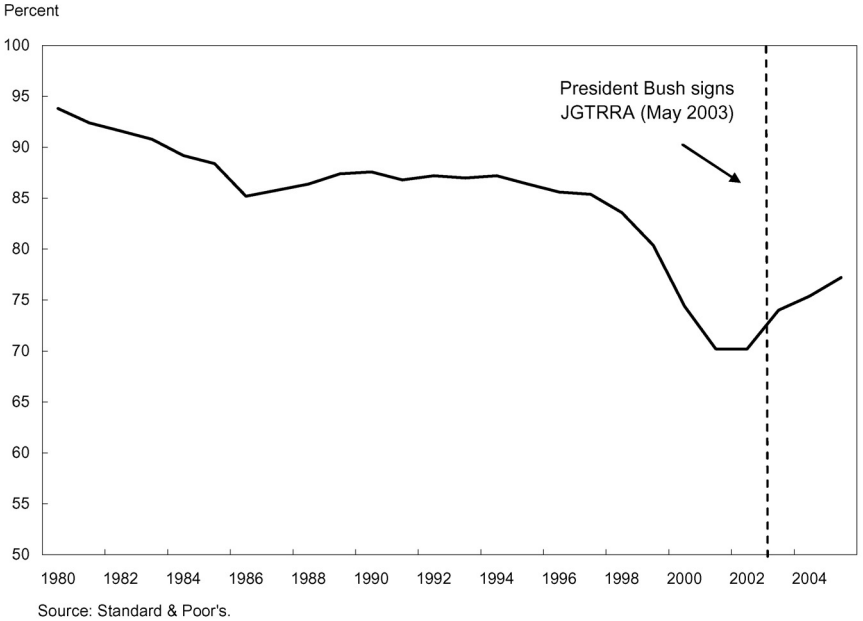
these changes to have lasting effects on investment and economic growth, these pro-growth policies should be made permanent.

Chart 3-4 **Dividends per Share**
Since passage of JGTRRA, there has been an increase in the average amount of dividend payments.



Source: Standard & Poor's.

Chart 3-5 **Percent of Firms in the S&P 500 Paying Dividends**
The percent of firms paying dividends has increased following passage of JGTRRA.



Source: Standard & Poor's.

Increasing the Deductibility of Capital Investment

Another pro-growth change proposed and signed into law by President Bush was the Job Creation and Worker Assistance Act of 2002 (JCWAA). This act included a provision for *temporary bonus depreciation*, which allowed taxpayers an additional first-year depreciation deduction of 30 percent from taxable income. In 2003, JGTRRA included a modification to the JCWAA bonus depreciation provision, allowing taxpayers to take a first-year depreciation deduction of 50 percent from taxable income. Both provisions were temporary and expired at the end of 2004 because the purpose of these provisions was to provide a temporary investment stimulus to speed economic recovery and promote short-term economic growth. By allowing investors to deduct more of the cost of investment from taxable income in the year of acquisition, these provisions had the effect of lowering by one-half or more the effective marginal tax rate on qualifying investment.

Removing Distortions to Human Capital Investment

President Bush proposed and signed into law a number of provisions that reduced tax distortions affecting human capital investment decisions. Among these provisions were statutory changes that allow households to deduct (within limits) higher education costs; an expansion of the deductibility of student loan interest payments; and an expansion of the full deductibility of employer-provided education expenses to include workers pursuing graduate school education. Other changes include an increase in the amount of money a household can contribute to a Coverdell ESA; the removal of tax considerations from higher education costs paid through qualified tuition programs (Section 529 plans); an increase in the amount of costs eligible for the Lifetime Learning credit; and an expansion of eligibility for these various education provisions.

Other Changes

Other changes that have been signed into law by President Bush over the past 5 years are tax credits aimed at encouraging research investment; an expansion of full deductibility of the acquisition cost of tangible property for small business (called Section 179 expensing); full deductibility of brownfields projects; and full deductibility of certain oil exploration costs. Some of these changes stimulated investment and greater short-run economic growth. Unfortunately, the temporary nature of many of these provisions reduces their potential to stimulate long-run efficiency gains to investment and economic growth.

Incremental Approaches to a More Pro-Growth Tax System

Many economists agree that adopting a broad-based consumption tax would benefit the economy. There is a substantial body of research that estimates the economy-wide growth effects of this broad pro-growth tax reform. The estimated effects can vary widely depending on the type of model used and the policy change considered. For example, when considering the transition to a pro-growth consumption tax, estimates of the short-run increase in the capital stock range from about 1 percent to about 14 percent, with estimates of the long-run increase in the capital stock ranging from about 0 percent to about 32 percent. As a result of *capital deepening* (the increase in capital per worker), the long-run increase in real gross domestic product is estimated in the range of about 2 percent to about 8 percent (about $260 billion to about $1.1 trillion in 2006 GDP).

In the absence of such broad reform and the transition to a consumption tax base, there are two primary alternatives for adopting a more pro-growth tax system. One is to allow investors to completely deduct (fully expense) or substantially deduct (partially expense) the cost of their investments in the year in which the investments are made. The other alternative is to lower the statutory tax rate on investment income by reducing or eliminating the tax rate on corporate income, capital gains and dividends, or a mixture of both. Both of these approaches would reduce the amount of tax paid on an investment return, lowering the pretax rate of return necessary to undertake new investment. If one of the objectives of pro-growth tax policy is to move incrementally to a more efficient, consumption-based tax system, then expensing does a better job than rate reductions of meeting this objective. Indeed, full expensing of investment is a necessary component of a consumption tax base. By contrast, reducing the statutory corporate tax rate or eliminating the tax on capital gains and dividends could be accomplished under the existing hybrid tax system.

There are a number of reform options that contain elements of these approaches. One option is a value-added tax (VAT) that replaces all or part of the corporate income tax; another, the Growth and Income Tax (GIT), proposed by the President's Tax Reform Panel, would lower effective marginal tax rates on new investment. Other options focus on household saving as a means to remove investment distortions. However, compared to a VAT or the GIT, these options would provide relatively less stimulus for domestic growth within a rapidly expanding global market. The reason is that focusing on savings incentives tends to ignore the full effects that capital has on the economy. By reducing taxes on investment, the economy develops more capital, increasing labor productivity and wages. In addition, reducing

effective tax rates on investment attracts more foreign investment because U.S.-based investment would offer relatively higher after-tax rates of return. (See Chapter 8, International Trade and Investment, for a discussion of the benefits to the U.S. of foreign investment.) Expanding savings incentives can provide capital deepening, but it will not encourage greater investment by foreign investors who do not receive the benefits of the reform. This section focuses on pro-growth options that would have the greatest impact on economic growth.

Expensing of Investment

Allowing investors to fully deduct the cost of an investment from taxable income is called *full expensing* of investment. As shown in Box 3-1, in the absence of other taxes, full expensing reduces the tax paid on the normal return to capital investment to zero, completely removing taxes from the investment decision. This happens for two reasons. First, all assets face the same effective tax rate—zero—so that taxes no longer influence the decision about where or in what to invest. This results in a more efficient allocation of capital. Second, with full expensing there is no difference between the pretax and after-tax rates of return to investment. As a result, taxes do not discourage capital formation.

It is important to note that full expensing is equivalent to not taxing the ordinary, normal return (or opportunity cost) of new investment. As shown in Box 3-1, the reason is that full expensing is equivalent to an interest-free loan on the value of foregone tax liability. To see this result, consider the example in Box 3-1. Under the income tax, the firm pays $35 in tax on the cost of the investment, whereas under full expensing the tax liability on the cost of the investment is zero. Assuming that the pretax return of 10 percent equals the normal opportunity cost of funds, the deferral of tax liability is worth $3.50 to the firm, which is exactly equal to the tax on the investment return. Because the opportunity cost of this loan is equal to the normal return to the investment, full expensing of investment costs is equivalent to excluding the normal return portion of capital income from taxation. However, returns in excess of the opportunity cost (called *supra-normal* returns) are still subject to taxation. For our example, if the total return of 10 percent is composed as a normal return of 6 percent and a supra-normal return of 4 percent, then the deferral of tax liability is worth $2.10 to the firm. This is equivalent to the firm paying $1.40 in tax, which is a tax of exactly 35 percent on the $4.00 supra-normal return.

Partial expensing of investment occurs when something less than 100 percent of an asset's purchase price is excluded from taxable income in the year the asset is purchased. Partial expensing reduces, but does not eliminate, the amount of tax paid on the return to capital investment because costs

Box 3-1: Investment Returns Under Different Tax Systems: A Numerical Example

Suppose a firm undertakes an investment in a new machine that costs $100 and that earns a pretax rate of return of 10 percent. Assume that the machine does not depreciate in value and that the firm sells the machine for $110 after 1 year. Under a system with a corporate income tax and no expensing, the after-tax cost of the machine is $100 because the firm receives no deduction from taxable income when it purchases the machine. At the end of the year the firm deducts the cost of the machine from the firm's total income and has a net income of $10. With a corporate tax rate of 35 percent, the firm pays $3.50 (35 percent of $10) in tax to the government. This leaves the firm with $6.50 in after-tax income, and results in an after-tax rate of return of 6.5 percent on its investment of $100. The corporate income tax creates a 3.5 percentage point tax wedge between the pretax rate of return (10 percent) and the after-tax rate of return (6.5 percent) on the investment.

With full expensing, the firm deducts the cost of the machine from taxable income at the time of purchase. This means the firm's after-tax cost of the machine is only $65. As before, the firm then sells the machine at the end of the year for $110. Under full expensing, the entire $110 is included in taxable income because the firm deducted the cost of the machine when it was purchased. This means the firm pays $38.50 (35 percent of $110) in taxes and makes an after-tax profit of $6.50. The firm earns an after-tax rate of return of 10 percent on the $65 investment, which equals the pretax rate of return. Because the firm is not taxed on the investment's return, the result is an effective marginal tax rate of zero.

In contrast, consider what happens when the government lowers the corporate tax rate to 25 percent but allows no expensing. The firm sells the machine at the end of the year for $110 and pays tax of $2.50 (25 percent of $10). As such, the firm's after-tax rate of return is 7.5 percent and the tax wedge between the pretax and after-tax rate of return is 2.5 percentage points. Lowering the corporate tax rate reduces the disincentive to invest but does not eliminate it unless the statutory tax rate is reduced to zero. By comparison, reducing the statutory corporate marginal tax rate to 25 percent would be equivalent, in terms of the effective tax rate, to about 38 percent partial expensing of investment costs.

Income Tax versus Pro-Growth Tax: A Numerical Example

Cost of machine		$100
Pre-tax rate of return		10%
Value of asset in 1 year		$110
Corporate rate tax		35%
Income tax:		
Net taxable income		
= Selling price - Cost of asset	$110 - $100	$10
Taxes owed		
= Corporate tax rate * Profit	35% * $10	$3.50
After-tax return		
= Net income - Taxes owed	$10 - $3.50	$6.50
After-tax rate of return		
= After-tax return / Cost of machine	$6.50 / $100	6.5%
EMTR on investment income*		
= Tax paid / Investment income	$3.50 / $10	**35%**
Pro-growth tax:		
Expensing		
New cost of machine		
= Old cost of machine * (1 - corp rate)	$100 * (1 - 35%)	$65
Net taxable income		$110
Taxes owed	35% * $110	$38.50
After-tax return	$110 - $38.50 - $65	$6.50
After-tax rate of return	$6.50 / $65	10%
EMTR on investment income	$0 / $10	**0%**
Corporate rate cut (new rate=25%)		
Net taxable income	$110 - $100	$10
Taxes owed	25% * $10	$2.50
After-tax return	$10 - $2.50	$7.50
After-tax rate of return	$7.50 / $100	7.5%
EMTR on investment income	$2.50 / $10	**25%**

*Note: EMTR refers to the effective marginal tax rate.

in excess of those expensed are still subject to the tax depreciation schedules, resulting in an inefficient allocation of capital.

There are several advantages to adopting full expensing as part of the current tax system. First, full expensing reduces the tax wedge between the pretax and the after-tax rates of return on investments, resulting in a more efficient level and allocation of capital throughout the economy. Second, if coupled with the repeal of capital gains and dividends taxes, full expensing completely removes taxes from equity-financed investment decisions. Third, full expensing reduces distortions that affect the financing of new investment by reducing incentives to debt-finance investment. Fourth, expensing is an integral part of many major tax reform proposals, such as a transition to a VAT, a consumed income tax, or the GIT. Overall, full expensing greatly simplifies the tax system and is an important step in the transition to a full consumption tax.

There are two important issues that must be resolved when adopting expensing as part of the tax system. The first issue is *transition costs*, which pertain to how the tax system will treat existing capital, called "old capital," at the time of the change. This is important because expensing can place a potentially heavy tax burden on the owners of existing capital. This tax burden arises because of the difference in the treatment of new capital (which can be expensed) and old capital (which does not benefit from expensing). As shown in Box 3-1, the after-tax rate of return on new investment rises with full expensing. The increase makes new investment projects relatively more attractive to investors than purchasing existing capital projects. Consequently, the relative value of the existing capital at the date of the change must fall in order for old capital to earn the same after-tax rate of return as an investment in new capital. The decline in value is equivalent to an unavoidable tax on existing capital and is considered a transition cost of full expensing.

The second issue is the treatment of interest payments under full or partial expensing. If expensing is to result in taxes being neutral in investment decisions, interest payments must be taken out of the tax system. Otherwise expensing could result in negative tax rates and overinvestment in capital. Removing interest from the tax base means that borrowers cannot deduct interest payments from taxable income. Similarly, lenders would not include interest payments in taxable income. The elimination of interest deductibility would help to equalize the tax treatment of different types of financing and would reduce tax distortions in investment decisions. However, excluding financial transactions from taxation could create difficulties for financial services businesses and result in opportunities for *tax arbitrage*—forming or consolidating businesses to take advantage of the difference in tax rates as the basis for profit. The taxation of financial services under a consumption tax is a perennially thorny problem that has yet to admit of an easy solution.

Reducing Statutory Tax Rates

An alternative to expensing of investment is to reduce statutory tax rates on investment income. Unless the tax rate is reduced to zero, however, lowering the statutory tax rate will not completely eliminate distortions affecting capital investment decisions. As discussed in Box 3-1, the effect of lower statutory rates on investment is similar to that of partial expensing of investment. Lowering the statutory tax rate on investment can take many forms—lowering the corporate tax rate, lowering individual tax rates, reducing or eliminating the tax rate on capital gains and dividends, or some combination of these. All of these alternatives have the effect of reducing tax distortions on investment decisions, but the economic effects will differ according to which tax rates are reduced.

One of the biggest misconceptions about pro-growth tax policy is that reducing the statutory corporate tax rate only benefits corporations. The main problem with this argument is that corporations are pure legal entities that cannot themselves bear the burden of taxes. It is households, in their role as owners and users of corporate capital, who benefit from the reduction in corporate tax rates. As discussed in Box 3-2, corporate tax burdens are distributed across all households. The long-run effect of reducing the corporate tax rate is to increase the capital stock, making labor more productive. Ultimately, reducing corporate taxes benefits labor through higher wages and benefits capital owners through higher after-tax returns.

An important goal of pro-growth tax policy is to promote a tax system that does not create distortions that affect the structure of business formation or business investment. By reducing statutory tax rates for corporations or households in an uncoordinated way, the tax system can create incentives that favor certain forms of business. For example, consider reducing the maximum effective corporate tax rate below the maximum effective individual tax rate. This would make it relatively more attractive for businesses to incorporate rather than form as a sole proprietorship or partnership (which pay tax using individual rate schedules). Consolidating the business and individual tax bases would reduce or remove taxes from consideration in business decisions.

Reducing individual tax rates can also reduce tax considerations from capital investment decisions. Perhaps the most direct way to stimulate greater individual saving and investment is to reduce or eliminate the tax rate on capital gains and dividends. This is important because even with full expensing, the effective tax rate on investment is positive as long as there are taxes on capital gains and investment income. Consider two effects from the recent reduction in taxes on capital gains and dividends. First, there was an overall reduction in taxes on corporate income, which stimulated greater investment. Second, the changes reduced the tax distortion that favored returns in the form of capital gains. Prior to JGTRRA, the double tax on corporate income was as high as 42 percent and 61 percent for corporate

Box 3-2: Who Bears the Burden of Corporate Taxes?

One key tenet of public economics is that businesses do not pay taxes, people do. Businesses organize capital and labor to produce goods and services used throughout the economy and consumed by households. But businesses are owned by individuals, hire individuals as workers, and sell to individual consumers. While firms remit business taxes to the government, it is individuals who bear the burden (or incidence) of business taxes. Investors may bear the burden through lower after-tax returns to investment, workers through lower wages, and consumers through higher prices.

Tax law provides no insight as to who bears the burden of the corporate tax. A corporation can be viewed as an institution comprised of its owners and creditors, wage earners, and customers. In this sense, everyone belongs to the institution, so everyone consequentially bears some portion of the tax burden. An important question is whether the tax burden is primarily borne by owners of capital or by labor. In analyzing the incidence of the corporate tax between capital and labor, it is important to distinguish between the short-run versus the long-run burdens. In the short run, increases in the corporate tax are borne by current owners of corporate capital through a drop in asset values and by investors through lower after-tax rates of return. In the long run, labor bears most of the burden of the corporate tax. This is because for taxes on capital income, an increase in the effective tax rate on new saving and investment leads to a reduction in capital accumulation. The resulting decline in the capital-to-labor ratio decreases labor productivity and leads to a fall in wages.

income distributed as capital gains and dividends, respectively. After JGTRRA, the double tax on corporate income fell to about 40 percent and 45 percent for capital gains and dividends, respectively. As shown in Charts 3-3 to 3-5, following JGTRRA, real private nonresidential investment rose substantially, and there was an increase in the average amount of dividend payments and the percent of firms paying dividends.

Comparison of Effects of Different Pro-Growth Policies

The primary objective of pro-growth tax policy is to stimulate new investment. New investment leads to a larger capital stock, increases in productivity, higher wages, and economic growth. Full expensing of investment does a

better job than rate cuts in meeting this objective. As noted above, rate cuts reduce but do not eliminate the effect of taxes on new investment decisions. In addition, a tax rate reduction applies to all investments, new and old alike. By contrast, full expensing is carefully targeted towards removing tax considerations from new investment decisions.

One method of comparing policies is to estimate "bang for the buck" measures that show the amount of investment stimulus per dollar of tax cost. These measures are derived by using sophisticated macroeconomic models to simulate the effect of pro-growth policy changes, assuming that each policy change has the same budget effect. As shown in Table 3-2, full expensing provides investment incentives that are 3.5 times as large per dollar of revenue cost compared to reductions in corporate tax rates. The reason for this difference is that much of the revenue cost from statutory rate reductions is from reducing taxes on existing capital. Because expensing applies to new capital only, the potential for economic growth is much greater with expensing than for reductions in the statutory tax rates that have the same revenue cost.

As discussed above, a major issue with expensing is the transition cost imposed on existing capital. It is possible that during the transition to full expensing, the government could provide tax relief to the owners of existing capital. However, the revenue cost of providing this type of transition relief would require rate increases or other tax changes that could reduce the incentive to invest in new capital projects. Estimates of the cost of transition relief range from about 1 percentage point to about 6 percentage points of the long-run increase in real GDP, depending on how and for how long transition relief is paid. Thus it is possible that providing transition relief to owners of existing capital could eliminate all of the efficiency gains from adopting a more pro-growth tax system.

TABLE 3-2.— *Effective Marginal Tax Rates on Investment*

	Effective marginal tax rate on investment	"Bang for the Buck": investment incentive relative to revenue cost (present value)
Current law	17%	
Policy change:		
100% expensing	0%	70%
30% expensing	13%	70%
Corporate tax rate lowered to 25%	15%	20%
Tax rate on dividends and capital gains lowered to 10%	16%	20%

Source: Department of the Treasury (Office of Tax Analysis).

Conclusion

The goal of pro-growth tax policy is to finance a given level of government services in a way that minimizes the drag imposed on the economy by tax distortions on investment decisions of households and businesses. Of particular importance is the effect a tax system may have on capital investment decisions. Taxing capital in a way that distorts investment decisions can affect the level, allocation, and financing of new projects. Reducing the tax on capital income will lead to a larger capital stock and higher standards of living. With more capital available, labor becomes more productive and real wages rise.

An incremental approach to pro-growth tax policy would be a transition to a tax system that allows full expensing of capital investment. Research indicates that we could expect up to a 8-percent increase in long-run real GDP from adopting the pro-growth policy of full expensing. Full expensing provides relatively more bang for the buck because it targets new investment, whereas rate cuts benefit old and new capital alike.

Reducing or eliminating distortionary capital taxation leads to a more efficient level and allocation of capital throughout the economy. This increase in efficiency in turn results in higher productivity, GDP, and standards of living. While there have been recent changes to a more pro-growth tax system, the temporary nature of the provisions reduces the long-run impact of these policy changes on investment and economic growth. Making these changes permanent would ensure a tax system that minimizes tax distortions to investment decisions that can keep the economy from reaching its long-run potential.