CHAPTER 5

Tax Policy and Economic Growth

THE ADMINISTRATION, in cooperation with the Congress, brought about a fundamental change in Federal tax policy in 1981. The new policy involves far more than simply reducing tax burdens. The Economic Recovery Tax Act of 1981 has changed the basic character of the tax system by shifting the burden of taxation away from capital income, thereby providing substantially greater incentives for capital investments and personal saving.

This tax policy is a sharp break from the policies of the recent past. It reflects a different understanding of the way tax policy affects the U.S. economy. This chapter provides a framework for analyzing the effects of the Administration's tax policy on the economy. The Administration's fiscal policy has two key characteristics. First, the Administration views the principal fiscal policy instruments—spending, taxing, and deficit—chiefly in terms of their impact on the individual decisions of households and businesses, since it is these decisions that ultimately generate employment and growth.

The second key element that distinguishes current policies from those of the past is that they are fundamentally long term in nature. Economic growth is a long-run process that is determined by technological change and the supply and allocation of such productive factors as raw materials, labor, and capital. Households and businesses look to the future in making current economic decisions. The government has some direct influence on factor inputs, but its main influence is through the indirect and long-term incentives it provides to work and save.

The fact that households and businesses make long-term as well as day-to-day decisions underscores the importance of consistency in government policy. Frequent changes in policy generate uncertainty about the probable duration of current policies and jeopardize the chances that any particular policy will succeed. Since the long run is simply a sequence of short runs, short-run policies that deviate from long-run goals ultimately mean abandoning long-run goals. The current economic policies, more than those of any recent Administration, are policies for the long term.

Fiscal policy involves three interrelated choices. One is choosing an expenditure policy—how much to spend, and what kind of expenditures to make. The second is taxation—how much to collect, and which tax instruments to use, including implicit taxation through the creation of money, to raise revenues. The third, deficit policy, involves deciding on the size and distribution of the deficit over time; that is, the difference in the time pattern of receipts and expenditures.

The government's long-term budget constraint provides a framework for considering the coordination of fiscal and monetary policy, for understanding the impact of deficits on economic growth, and for discussing the allocation across generations of the burden of taxation. The American people must eventually pay for what the government spends. While the government can borrow from the private sector to delay payment for its spending on consumption and transfer payments, such borrowing is subject to a limit. Eventually the government must either reduce spending or raise tax revenues to pay the interest payments on past accumulations of debt. When the government borrows, and thereby delays levying taxes to pay for its current spending, it shifts the burden of paying for its current spending to future generations.

The government uses explicit taxation, such as personal and corporate income taxes, to raise revenue. As will be shown in this chapter, it also raises revenue with implicit taxes. By increasing the supply of money, for example, the Federal Government, in effect, creates some of the dollars needed to pay for current expenditures. But excessive expansion of the money supply results in a rise in prices that reduces the real value of the existing stock of money held by the private sector. This is one way in which the money creation process transfers real resources from the private to the public sector. A second way is that the inflation produced by excessive monetary expansion reduces the real value of the nominal government debt held by the private sector. By creating inflation the government can pay off its obligations in cheaper dollars. The purchasers of government bonds require higher interest rates to compensate for the expected inflation. Consequently, the government collects real resources from devaluing the stock of nominal bonds only when the actual inflation rate exceeds the expected inflation rate. The reduction in the real value of outstanding debt that results from inflation means that the government requires less revenue from explicit taxes. The Administration's program is based on a commitment to reducing both explicit and implicit taxation.

The fact that explicit taxation and money creation are alternative ways to finance government expenditures means that conventional

fiscal and monetary policy must be coordinated. If the government does not pay for its expenditures with explicit taxes, now or in the future, it will eventually be forced to resort to the printing press. Hence, the ultimate path to lower explicit and implicit taxation is a reduction in the growth of government spending.

The Administration, with the support of the Congress, has significantly changed national macroeconomic policy. However, the ultimate success of the Administration's policy will depend on the degree to which it is credible in the eyes of the public. Households will increase their long-term saving and labor supply in response to lower taxes on capital and labor income if they believe those taxes will remain low. Workers and employers will agree to moderate nominal wage increases only to the extent that they believe inflation will moderate. Businesses will raise prices at slower rates only if they know that other prices—primarily those of their competitors—are also increasing at slower rates. In short, the problem of coordinating the private sector's response to government policy is a problem of convincing the public that the Federal Government will be steadfast in maintaining its new economic course.

ECONOMIC GROWTH: PAST PERFORMANCE AND FUTURE POTENTIAL

Economic growth in the United States has been unusually low since 1973. Annual growth in real disposable per capita income between 1973 and 1979 slowed to 1.6 percent from an average rate of 3.0 percent in the period 1959 to 1973. The country is now experiencing its third recession since 1973.

Our recent economic performance has been unsatisfactory not only in comparison with our own postwar experience but also in comparison with the economic performance of our principle trading partners. In the 1970s, annual rates of increase in real per capita income among the other developed countries exceeded U.S. rates by nearly one-fourth. Other indications of economic malaise were declines in the measured growth rates of total output, capital input, and total factor productivity. While the period from 1959 to 1973 witnessed average annual growth rates in real gross national product (GNP) of 4.0 percent, the rate from 1973 to 1979 was only 2.8 percent.

MEASURING GROWTH

Economic growth reflects increases in factor inputs and total factor productivity. Each of these concepts, as well as output itself, is difficult to quantify. The growth of productivity is not directly observable. Rather, it is a measure of the real economic growth that is not

accounted for by growth of the labor force or growth in the capital stock. Several problems in defining both output and input must therefore be addressed in any attempt to measure economic growth and productivity growth.

The measure of output—real GNP—primarily reflects the value placed on goods and services traded in the marketplace. While pollution control devices and similar capital goods designed to improve the quality of life are counted in the input figures, the output figures exclude such items as cleaner air and water. In addition, there are problems in measuring the true quantities and qualities of some goods and services. One problem, for example, is determining the value of government output. Government services are measured in terms of their labor costs, which may differ substantially from their marginal value; other government outputs, such as the value of the services from tangible assets, are not counted in GNP at all.

Quality changes in tangible commodities also present difficult problems in measuring productivity growth. Today's color television set technologically surpasses the 1960 model, and 1981 computers differ greatly from their 1970 predecessors. These changes in quality are not adequately reflected in government reports of GNP growth. The procedures followed for some products ignore quality changes, in effect, counting a computer as a computer regardless of its year of manufacture.

There are also difficulties in quantifying inputs. Private capital is typically measured as the sum of accumulated investment expenditures, with allowances for depreciation rather than as the amount of capital actually in productive use. In addition, the amount of capital available for use is miscounted when changes in the longevity of investments are not recognized and depreciation allowances are not adjusted accordingly. The statistics on labor input also fail to capture many changes in the quality and quantity of labor services. There is, for example, little available data indicating the intensity with which workers actually work within any given period of time.

ECONOMIC GROWTH—THE HISTORICAL RECORD

Table 5-1 shows the historic growth rates in real gross national product, capital input, labor input, and total factor productivity. Because of the problems of aggregating private and public outputs and inputs, the table also shows growth in the private economy, excluding the farm and housing sectors. These data, based on estimates prepared by the Council of Economic Advisers, are presented for four periods. Each of these periods encompasses a full economic cycle.

TABLE 5–1.—*Average annual growth rates of real GNP, total factor productivity, and factor inputs, 1959–79*

[Percent]

Period	Real GNP	Total factor productivity	Capital	Labor
	Total GNP			
1959 to 1965	4.3	2.5	3.8	0.9
1965 to 1969	4.0	1.9	4.1	1.2
1969 to 1973	3.6	2.3	3.5	.4
1973 to 1979	2.8	1.2	2.5	1.6
	Private nonfarm nonhousing GNP			
1959 to 1965	4.4	2.5	4.1	1.0
1965 to 1969	4.0	1.3	5.8	1.3
1969 to 1973	4.1	2.4	4.2	.7
1973 to 1979	2.8	.6	3.2	1.8

Sources: Department of Commerce (Bureau of Economic Analysis); Gollop, Frank and Jorgenson, Dale, "U.S. Productivity Growth By Industry 1947–1973"; and Council of Economic Advisers.

Labor input is measured as total annual hours worked, adjusted by age and sex. In accounting for total GNP growth, labor input includes agricultural workers, government and civilian workers, and military personnel. Capital input includes government capital plus private residential, nonresidential, and agricultural capital. For private GNP, factor inputs are taken to be only those specific to this segment of the economy. The growth rate of total factor productivity is computed for both total GNP and private GNP assuming a simple production relationship between output and the supplies of capital and labor.

Some of the poorer growth performance in recent years reflects a slowdown in capital formation. The Nation's total net capital stock, including both private and government capital, but excluding consumer durables, grew at an average annual rate of 3.8 percent during the period 1965 to 1973, but at only 2.5 percent per year between 1973 and 1979. The slowdown in capital formation was equally pronounced in the private nonfarm nonhousing sector; the 1973 to 1979 growth rate was less than two-thirds of the growth rate from 1965 to 1973. This reduction in the rate of capital formation coincided with a decline of nearly one-fourth in the Nation's saving rate. The Nation's saving rate is defined here as the share of net national product not consumed by either the government or household sectors. Household consumption includes purchases of consumer durables.

Since 1973 the growth of labor input has greatly exceeded that experienced in the previous 25 years. Adjusted for age and sex, labor input grew at only 0.7 percent per year between 1950 and 1973, less than half the rate of growth between 1973 and 1979. The primary causes of the acceleration of labor input are the rapid rise in female employment rates, particularly for women aged 25 to 44, a rise in the

population aged 18 to 35, and a leveling off of employment rates for males aged 65 and over.

Table 5–1 indicates a sizable reduction in productivity growth rates during the middle and late 1970s in comparison with prior years. This reduction reflected a combination of a lower growth rate for other, nonmeasured inputs and a less efficient allocation of resources. Measured productivity growth of total GNP declined by 48 percent between these periods; the decline for the private nonfarm nonhousing sector was 73 percent. By itself, the slower productivity growth from 1973 to 1979 can account for a 1.1 percentage point decline in GNP growth from that experienced in the previous 14 years. This method of growth accounting attributes a 1.8 percentage point decline in the growth of private nonfarm nonhousing output to the productivity slowdown between these periods.

EXPLAINING THE PRODUCTIVITY SLOWDOWN

There have been concerted efforts to explain the measured slowdown. These efforts have met with only limited success. While there are a number of possible explanatory variables, available studies suggest that none separately nor in combination is capable of explaining more than half of the decline. Capital expenditures for pollution abatement equipment (which provides no measurable output) appear responsible for a small fraction of the slowdown. Another explanation is the growth of productive factors other than capital and labor that are typically not included as inputs in growth accounting. As a result, changes in the availability or use of such inputs as energy or improved land are measured as a change in productivity. The reductions in the use of energy following the 1974 and 1979 oil price shocks also explain some fraction of the measured productivity slowdown.

Other possible, but less well-documented, explanations include a decline in economic efficiency associated with higher levels of distorting taxes and increased levels of government regulation. Regulation of energy in the 1970s was a prime example of the way in which government intervention in the private economy reduced economic efficiency.

Productive efficiency can also be reduced by tax policies that distort the allocation of inputs. Federal subsidies to particular industries permit them to gain more access to productive inputs than is economically efficient, and differential tax treatment of productive inputs can also result in economic inefficiency. For example, if the return on capital expenditures of a particular type, such as spending for equipment, is taxed at a lower rate than the return on other capital expenditures, such as those for plant, business investment will shift

toward the favorably treated input. Hence, the composition of the capital stock will be altered, and national output would be produced less efficiently from what would occur with neutral tax treatment.

One-time changes in regulation or the tax structure that impair the efficient operation of the economy are more likely to produce a one-time decline in output than permanently alter the growth rate. During the period in which output drops, however, measured productivity growth will be smaller. Hence, the drop in measured productivity shown in Table 5-1 may reflect, in part, the progressive increase in regulation and effective marginal tax rates through the 1970s.

PROSPECTS FOR GROWTH IN THE 1980s

The Administration projects a 3.2 percent annual rate of growth in real GNP over the period 1979 through 1987. While higher than the rate from 1974 to 1979, this rate is one-fifth lower than the rate experienced from 1959 to 1973. An increase in the rate of capital formation from the 1973–79 rate of 2.5 percent per year to the 1969–73 rate of 3.5 percent per year would, by itself, raise output growth to 3.1 percent, even if productivity and labor growth rates remained constant. Given the incentives for capital formation provided by the Economic Recovery Tax Act of 1981, a 3.5 percent growth in capital over this period seems attainable. Growth in output will also be stimulated by demographic changes. Between 1979 and the mid-1980s a large segment of the baby-boom generation will become fully integrated into the U.S. labor market. The associated changes in the age and sex composition of the labor force should, by themselves, account for a 0.3 percent annual rate of growth in output between 1979 and 1986. Growth in labor input is expected to exceed this, however, as the Administration's new incentives for additional labor supply lead to long-term increases in employment rates and hours worked.

A growth in total factor productivity greater than the 1.2 percent experienced from 1973 to 1979 is not essential to meet the Administration's 1987 GNP projection, but it is likely to occur as a result of the reduction in the general level of distorting taxation and the new regulatory environment.

INCREASING FACTOR SUPPLY

Current and future supplies of labor and capital to the economy primarily reflect the long-term supply and demand decisions of households and firms. At any point in time the aggregate supplies of labor and capital depend not only on the number and types of workers and the amount of plant and equipment available, but also on the rate of utilization of these productive factors. People can work and

machines can be worked more or less within any period of time. In the very short run, changes in the supplies of factor services involve changes in factor utilization rates. In the longer run, the number and quality of workers, and the quantity and quality of structures and equipment, are variable.

Near-term increases in the stock of physical capital require producing or importing more capital goods in the current period. But producing more capital goods means producing fewer goods for consumption. Hence, one way to expand the stock of physical capital is for the household and government sectors to reduce their combined demands for current consumption. Another way to expand capital formation is simply to expand current output faster than current consumption. A third way is to import capital.

The Administration seeks to increase capital formation by both raising the level of output and reducing the fraction of output consumed. A reduction in the Federal Government's own rate of consumption is an important element in this equation, but creating an environment where households choose to save a larger share of their income is of paramount importance. The figures in Table 5–2 illustrate this point.

Table 5–2 presents historical data on household and government consumption rates and the rate of total net national saving. These consumption and saving rates are useful for portraying aggregate saving behavior. The household consumption rate is defined as household (private sector) consumption divided by the difference between net national product and total government consumption. National output less government consumption provides a measure of the private sector's effective disposable income, because the private sector must pay for the government's current consumption, either now or in the future.

TABLE 5–2.—*Average annual consumption and saving rates, 1951–80*

[Percent of net national product (NNP)]

Period	Total Government consumption as percent of NNP	Federal Government consumption as percent of NNP	Household consumption as percent of nongovernmental NNP	Net national saving as percent of NNP
1951–60	14.1	8.2	81.0	16.4
1961–70	16.7	8.3	81.7	15.2
1971–80	18.9	7.0	85.5	11.7

Sources: Department of Commerce (Bureau of Economic Analysis) and Council of Economic Advisers.

Government consumption is defined here as government expenditures on goods and services immediately consumed. Government purchases of capital goods are not included. The table also indicates

average rates by decade of net national saving, defined as net national product less household and government consumption, divided by net national product.

From the 1960s to the 1970s the Nation's total net saving rate fell from 15.2 percent to 11.7 percent. Changes in both government and household consumption rates played a role in reducing the saving rate, but the changes in the household consumption rate were far more important. If the rate of household consumption out of total disposable income—output less government consumption—had not changed over this period, the Nation's saving rate would have fallen by only 0.4 percentage point rather than by 3.5 percentage points, despite an increase in government consumption as a share of net national product from 16.7 to 18.9 percent. Thus, to achieve higher national saving rates it is important to lower the household consumption rate.

There are two ways in which the household consumption rate can be reduced and the national saving rate increased. One way is for households to increase total output by supplying more labor without at the same time increasing current consumption proportionately. The other is for households to maintain their current supply of labor (and therefore output) but reduce their levels of consumption. In either case the household consumption rate falls, and the economy saves more.

THE ECONOMIC EFFECTS OF TAX POLICY

In making the decisions that determine national output and capital formation households consider their options. Each household makes decisions on consumption, saving, and work based on the household's current and future resources. These include the household's net worth (the current market value of all financial and real assets minus liabilities), the household's expected inheritances, the household's expected receipt of government transfer payments, and the household's human capital endowment. The endowment of human capital is the present value of after-tax income the household would earn if it was solely interested in maximizing its labor earnings.

Household choices between consumption and saving and between work and leisure are influenced by after-tax wage rates and after-tax rates of return on capital. When the government changes either the level or the structure of taxes, it ultimately alters household decisions about consumption, saving, and work effort. All aspects of the tax system, including both personal and business taxes, influence these decisions. For example, higher after-tax returns on capital income make present consumption more expensive than future consumption;

forgoing a dollar of consumption today and investing that dollar provides more than a dollar of consumption tomorrow, with the additional amount determined by the after-tax return on the investment.

It is customary to associate taxes on wage income with changes in incentives to work and to associate taxes on capital income with changes in incentives to consume or to save. Wage taxes also influence consumption and saving decisions, however, and taxes on capital income influence labor and leisure decisions. Lowering taxes on capital income raises the after-tax return on that income. The larger after-tax return effectively lowers the cost of enjoying leisure as well as consuming in the future relative to the present. Hence, a reduction in taxes on capital income increases the incentive to work now and can thus stimulate the supply of labor.

U.S. households and businesses face, at best, a highly uncertain economic environment resulting from continuing changes in preferences, prices, and productivity. Uncertainty with respect to government fiscal and monetary policy increases the uncertainty under which households make current and future consumption and labor supply decisions. In such an environment, households may choose to postpone supplying labor and businesses may decide to postpone new investment until the economic environment is more settled.

The Administration and the Congress have greatly reduced uncertainty with respect to the tax policy. The Economic Recovery Tax Act of 1981 clearly spells out the major features of the U.S. tax system for the next several years; the indexation of the Federal income tax slated to begin in 1985 will reduce the uncertainty associated with inflation pushing households into higher marginal tax brackets.

THE STRUCTURE OF THE TAX SYSTEM

The United States has a complex tax system that influences the choices households make between current and future consumption and current and future work effort. The tax system also influences the types of investments businesses undertake and the set of commodities households choose to purchase. The Federal personal and corporate income taxes, the social security program, the welfare system, and the money creation process all affect the economic behavior of firms and households. This section describes the changes introduced by the Economic Recovery Tax Act of 1981 to the personal and corporate income tax systems, and discusses the likely effects of these changes on labor supply and saving rates. Tax aspects of the social security system, the welfare system, and monetary policy are also addressed.

Last year's tax legislation made three important changes in the Federal personal income tax. First, marginal tax rates on given levels of nominal income will be reduced, in three stages, by 23 percent by 1984. Beginning in 1985 the personal income tax structure will be indexed to inflation. In addition, the top rate on income from capital was reduced from 70 percent to 50 percent. Table 5–3 presents marginal tax rates (excluding the social security tax on earnings) at various levels of real income for the next 5 years, based on Administration projections of future inflation. This table also presents the marginal tax rates that would have occurred in the absence of the Economic Recovery Tax Act of 1981.

TABLE 5–3.—*Comparison of marginal personal income tax rates by real income level under the Economic Recovery Tax Act of 1981 and old law, 1979–86* [1]

[Percent]

Real income (1979 dollars)	1979	1980	1981[2]	1982	1983	1984	1985	1986
Single:								
$10,000:								
Old law	21	21	21	24	24	24	24	26
New law			21	22	19	18	18	18
$20,000:								
Old law	30	30	34	34	34	34	39	39
New law			34	31	28	26	26	26
$30,000:								
Old law	39	39	39	44	44	49	49	49
New law			39	40	36	38	38	34
$50,000:								
Old law	49	50	50	50	50	50	50	50
New law			49	50	45	48	48	48
Married, two workers:								
$10,000:								
Old law	16	16	18	18	18	18	18	18
New law			18	16	15	14	14	14
$20,000:								
Old law	21	24	24	24	28	28	28	28
New law			24	22	19	22	18	18
$30,000:								
Old law	28	32	32	32	37	37	37	43
New law			32	29	26	28	28	28
$50,000:								
Old law	43	43	43	49	49	49	49	49
New law			42	44	40	38	38	38

[1] Excludes social security taxes and State and local income taxes.
[2] Tax rates for 1981 under new law rounded to nearest whole percent.
Source: Department of the Treasury, Office of Tax Analysis.

Two points are clear from this table. First, without the tax cut, marginal tax rates for low- and middle-income households would have been 30 percent to 50 percent higher. Second, although the tax cut will significantly lower marginal tax rates at all levels of income, tax rates at given levels of real income will decline by much less. Bracket creep will offset much of the effect of the tax cut between

1981 and 1985. Under the Administration's inflation projections, most households will still face marginal tax rates that are high by historical standards. Table 5–4 presents past and projected marginal tax rates for households at 3 points in the income distribution from 1965 to 1984. For the projected inflation path, marginal tax rates for median income households in 1984 will decline to roughly their 1977–80 levels, but will remain considerably above earlier rates. Thus, despite the substantial reductions introduced by the 1981 tax cut, most rates in 1984 will remain near the historical high rates on real income.

TABLE 5–4.—*Marginal personal income tax rates for four-person families, selected years, 1965–84* [1]

[Percent]

Year	Family income		
	One-half median income	Median income	Twice median income
1965	14	17	22
1970	15	20	26
1975	17	22	32
1980	18	24	43
	Under Economic Recovery Tax Act of 1981		
1981	17.8	27.7	42.5
1982	16	25	39
1983	15	23	40
1984	16	25	38
	Under old law		
1981	18	28	43
1982	18	28	43
1983	18	28	49
1984	21	32	49

[1] Excludes social security taxes and State and local income taxes.

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

To discuss the effects of the tax cuts on labor supply and saving decisions, it is necessary to understand the various incentives on household behavior created by reductions in marginal tax rates. Cutting tax rates increases an individual's after-tax wage rate. With the Federal Government taking a smaller share of the last dollar of earnings, the return to an individual from an extra hour of work or a more demanding job will increase, strengthening the incentive to work more hours, or accept a more demanding job.

Similarly, cutting tax rates increases after-tax interest rates. The higher the after-tax interest rate, the higher the level of future consumption possible for a given reduction of current consumption. The increase in after-tax interest rates resulting from the tax cuts will thus tend to decrease present consumption, including consumption of leisure as well as goods. In other words, households will tend both to work more and to save more.

Operating in the other direction is the effect of the tax cut on household income. As marginal tax rates fall, the total tax bill paid by a household will fall and its after-tax income will rise. As disposable incomes rise, both in the present and in the future, consumption of both goods and leisure will rise. Thus the effect of increased income will tend to decrease saving and decrease work effort. The net effect of the tax cut on saving and labor supply will vary according to household circumstances. The preponderance of empirical studies suggests that the labor supply effects of a tax cut are small for married men, somewhat larger for unmarried people, and substantial for married women. The most important effect of these changes in personal marginal income tax rates may thus be to increase labor force participation rates and hours of work by married women.

The second important change in the personal income tax introduced by last year's tax legislation was the extension of the opportunity to use Individual Retirement Accounts (IRAs) to all working households. Under the new law, each worker may contribute up to $2,000 to these accounts regardless of whether the worker is already covered under an employer-sponsored pension plan. One-earner couples can contribute up to $2,250. IRAs provide two tax advantages to contributors. First, contributions are deductible from taxable income. Second, returns on IRA investments accumulate tax-free as long as the funds are not withdrawn from the account. Given the sizable tax savings available from IRAs, the total amount of money invested in them can be expected to rise sharply. Some of this money will simply be transferred from other types of savings, including stocks, bonds, and savings accounts. However, for many households without sufficient liquid assets to transfer to IRAs, the last dollar contributed to an IRA will correspond to their marginal saving. That is, the last dollar of current consumption forgone will correspond to the last dollar invested in an IRA. Since the marginal tax rate on capital income obtained from these accounts is quite low, this provision is expected to increase the national saving rate as well as contribute to an increase in the labor supply.

The prospect of moving into higher marginal income tax brackets biases households away from activities that would generate higher future incomes. Hence, income tax progressivity encourages current consumption and leisure and discourages saving for the future. In the presence of inflation and an unindexed tax system, "bracket creep" strengthens this disincentive for generating future income. Indexation of the tax system in 1985 will, therefore, provide further stimulus for saving and economic growth.

Other changes in the tax code will also provide taxpayers with greater incentives to join the work force. The new law provides married couples filing a joint 1982 return with a 5 percent deduction in 1982 and a 10 percent deduction starting in 1983 on the earnings up to $30,000 of the lower earning spouse. If the couple's marginal tax rate would otherwise be 30 percent, the 10 percent deduction after 1982 will reduce the marginal tax rate on earnings of the second spouse to 27 percent. The spousal deduction will also place certain households in lower marginal tax brackets, thus further lowering marginal tax rates. This change should help sustain the growth of female labor force participation.

TAXATION OF INCOME FROM BUSINESS INVESTMENT

The Economic Recovery Tax Act of 1981 also made major changes in the taxation of business income. The most important change is the more generous treatment of the way in which capital can be depreciated for tax purposes, known as the accelerated cost recovery system (ACRS). A second change was the introduction of leasing rules that provide businesses with temporarily low taxable income the same investment incentives as other businesses. A third provision of the act is an increase in the investment tax credit for some types of equipment. Finally, a fourth provision allows small businesses to expense up to $5,000 of new investment in 1982 and 1983. The $5,000 limit will rise to $7,500 in 1984 and 1985, and $10,000 thereafter. These changes should substantially increase business investment by increasing the after-tax return available on new business projects.

TAX TREATMENT OF DEPRECIABLE PROPERTY

The ACRS will encourage business investment by shortening the period over which assets can be fully depreciated and by allowing firms to claim more of the depreciation early in the tax life of the asset. Before the adoption of ACRS, businesses were permitted to write off industrial equipment over an average period of 8.6 years. The ACRS asset life for this equipment is 5 years. For industrial plant, asset lives have been reduced by 37 percent, from an average of 23.8 years to 15 years. The ACRS depreciation schedules represent a combination of the declining balance and straightline method of depreciation through 1984. For 1985 and beyond, declining balance switching to sum of years digits is used. The depreciation schedules for the years after 1984 provide increasingly more acceleration of depreciation. The combined result of the ACRS and the investment tax credit will be a decline in effective tax rates on new investment over the period 1982 to 1987.

Table 5–5 shows historic and projected before-tax real rates of return in new capital investment required to provide a 4 percent after-tax real return. This real return is a commonly used analytical assumption. These numbers reflect the combined effect of the depreciation provisions and the investment tax credit. Historical numbers are based on historical rates of inflation. Rates of return in future years are based on the Administration's inflation projections. A before tax rate of return of 8 percent, for example, implies an effective tax rate of 50 percent on new investments. The calculations assume the new investment is equity financed. Hence, the tax advantages from the deduction of interest expense associated with debt financing are not included.

TABLE 5–5.—*Real before-tax rate of return required to provide a 4 percent real after-tax return, 1955–86*

[Percent]

Period	Construction machinery	General industrial equipment	Trucks, buses, and trailers	Industrial buildings	Commercial buildings
1955–59	8.9	9.5	10.8	8.0	8.0
1960–64	7.4	7.8	8.7	7.9	7.9
1965–69	6.5	6.9	7.5	7.6	7.6
1970–74	6.6	6.7	7.6	8.6	8.4
1975–79	6.1	6.4	7.6	9.0	8.7
1981	3.4	3.5	3.5	6.6	6.2
1982	3.1	3.3	3.1	6.4	6.1
1983	2.9	3.2	3.0	6.4	6.0
1984	2.9	3.1	2.9	6.4	6.0
1985	2.3	2.7	2.6	6.3	6.0
1986	2.2	2.6	2.5	6.3	6.0

Note.—Data for 1955–79 are based on Auerbach and Jorgenson calculations of expected inflation in each year. Data for 1981–86 are based on the Administration's projections of inflation (year-over-year percent change in the GNP implicit price deflator): 1982, 7.9; 1983, 6.0; 1984, 5.0; 1985, 4.7; 1986, 4.6; and 1987 and beyond, 4.5.

Sources: Auerbach, Alan and Jorgenson, Dale, "Inflation Proof Depreciation of Assets," *Harvard Business Review*, Sept.-Oct. 1980 (1955–79), and Council of Economic Advisers (1981–86, based on Economic Recovery Tax Act of 1981).

Under the assumptions made here, in comparison with the years 1975 to 1979, the 1982 real before-tax rate of return required to justify a new investment in general industrial equipment has been reduced from 6.4 to 3.3 percent. For investment in plant the required rate of return estimated here declines from 9.0 to 6.4 percent. The effective tax rates associated with these numbers decline between 1982 and 1986. This reflects both the more favorable depreciation schedules after 1984 and projections of continued declines in inflation.

Since depreciation allowances are not indexed, higher rates of inflation will raise effective tax rates. Table 5–6 presents the before-tax rates of return required in 1986 to provide a 4 percent after-tax

return under different assumptions about the rate of inflation prevailing in 1986 and beyond. The table shows that a reduction in inflation from 8 percent to 5 percent will lower the required before-tax rate of return from 3.2 percent to 2.7 percent in general industrial equipment and from 6.9 percent to 6.4 percent on plant. Conversely, a 1986 level of inflation of 12 percent would raise required before-tax rates of return to 3.7 percent for equipment and 7.4 percent for plant.

TABLE 5–6.—*Real before-tax rate of return required to provide a 4 percent after-tax return in 1986 at selected rates of inflation*

[Percent]

Type of capital	Inflation rate (percent)		
	5	8	12
Construction machinery	2.3	2.9	3.7
General industrial equipment	2.7	3.2	3.7
Trucks, buses, and trailers	2.5	3.1	3.7
Industrial buildings	6.4	6.9	7.4
Commercial buildings	6.1	6.5	6.9

Source: Council of Economic Advisers.

Tables 5–5 and 5–6 also indicate that the ACRS does not treat all types of business investment equally. Although favorable to all new investment, ACRS is relatively more favorable to investment in equipment. As a consequence, industries for which short-lived equipment represents a large fraction of their total capital will face lower effective tax rates than industries with a low equipment-intensive capital structure. Table 5–7 presents calculations of industry specific tax rates on new investment for 1982. There are two sets of numbers; the first indicates the tax rates that would have prevailed under the old law, while the second column indicates tax rates in 1982 under the Accelerated Cost Recovery System.

TABLE 5–7.—*Effective tax rates on new depreciable assets, selected industries, 1982* [1]

Industry	Old Law	New law
Agriculture	32.7	16.6
Mining	28.4	−3.4
Primary metals	34.0	7.5
Machinery and instruments	38.2	18.6
Motor vehicles	25.8	−11.3
Food	44.1	20.8
Pulp and paper	28.5	.9
Chemicals	28.8	8.6
Petroleum refining	35.0	1.1
Transportation services	31.0	−2.9
Utilities	43.2	30.6
Communications	39.8	14.1
Services and trade	53.2	37.1

[1] Industries chosen had at least $5 billion in new investment in 1981.

Note.—Assumes a 4 percent real after-tax rate of return and 8 percent inflation.

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

The table shows substantial reductions in tax rates for all industries, but differences among industries in the rate of tax reduction. The effect on each industry is different because each industry uses a different mix of capital. Tax rates vary across industries, from a high of 37 percent in the services and trade sector to a low of −11 percent in the motor vehicle industry. Effective tax rates on new investment are negative for some industries. The result will be lower total corporate tax liabilities rather than direct payments by the Treasury. These differential rates of taxation at the industry level will probably lead to relatively more investment in industries with lower tax rates.

LEASING PROVISIONS

The ACRS provides the same investment incentives to firms with taxable income and those with nontaxable income. The leasing provision of the Economic Recovery Tax Act of 1981 should enhance efficient allocation of capital across industries and across firms within the same industry. The fundamental principle underlying the leasing provisions is that investment incentives should be equal for all businesses in a given industry and across industries; that is, investment incentives should not favor investment in one firm over another. Prior to the establishment of these leasing provisions, firms with temporary tax losses (a condition especially characteristic of new enterprises) were often unable to take advantage of investment tax incentives. The reason was that temporarily unprofitable companies had no taxable income against which to apply the investment tax deductions. As a result, these companies were placed at a relative disadvantage, although the new investment undertaken by these companies was potentially as profitable as investment undertaken by firms with temporarily positive profits.

The leasing provisions will permit companies with no current taxable income to take advantage of investment incentives by transferring their tax credits and additional deductions associated with investment to firms with taxable income. For example, American automobile manufacturers who are currently reporting losses will now be able to take the same advantage of the incentives as more profitable firms. In the absence of the leasing provisions, investment would probably be too low in the automobile industry relative to the most productive mix of investment.

The leasing provisions will also have the advantage of reducing incentives for mergers. Under the old law, companies with positive taxable income had an incentive to merge with companies with tax losses because these tax losses could be used to offset the parent

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company's taxable income. The leasing provisions, by permitting companies with positive taxable income to effectively purchase the negative taxable income of other companies, will eliminate this motivation for mergers.

EFFECTS OF TAX ACT ON HOUSING AND CONSUMER DURABLES

The 1981 act will alter the allocation of existing capital and labor among industries. It will also affect the allocation of new business investment, the fraction of investment allocated to business as opposed to residential investment, and the division of consumption between durable commodities—such as residential real estate, automobiles, and furniture—and nondurable commodities.

The Tax Act improves the attractiveness of business investment relative to other forms of investment. As relative returns rise for business investment, financial institutions will tend to increase their business lending and decrease their consumer and mortgage lending. Households themselves will tend to lower their investments in these goods in order to put more of their savings directly into business capital by purchasing corporate stocks and bonds, or indirectly by placing their savings with financial institutions who will make these investments for them. In either case, more money will be channeled to business investment and less to housing and consumer durables than would have occurred without the ACRS.

To understand the effects of the new depreciation system on the consumption of durables versus nondurables, one must first realize that the implicit price of consuming durable goods is the after-tax return the owners of these durables would otherwise receive if they sold these assets and invested the proceeds.

The sizable reductions in tax rates on capital income mean that real after-tax returns on household saving will be substantially higher than they have been in the recent past. As a result, the implicit price of consumer durables has risen, and a long-run shift in demand away from housing, automobiles, and other consumer durables may result. While housing and durables provide important service flows, the tax treatment of service flows from durables may have led to overinvestment in them in the 1970s. Much of the spectacular rise in housing prices during the last decade was associated with the increasingly pro-durables bias imbedded in a very inflation-senstive system of capital income taxation. As inflation rose, so did effective taxes on capital income. This rise lowered the relative price of consuming durables because it lowered the opportunity costs of holding these durables. As a result, the demand for consumer durables in general, and housing in particular, was greatly stimulated. In the short run, housing prices were bid up dramatically, reflecting the tax-induced in-

creased demand for housing services. The higher housing prices, in turn, stimulated construction of new housing, since it increased the price at which newly constructed houses could be sold.

An offsetting consideration with respect to the durables industries is the relatively more favorable treatment of the motor vehicle industry under the 1981 Tax Act (Table 5–7). The effective tax rate on the return to new investment in the motor vehicle industry has been cut from 26 to −11 percent.

Another pertinent point is that the tax structure is simply one of numerous determinants of the demand for different commodities. The surge in new family formation resulting from the baby-boom of the 1950s will lead to a strong demand for housing that could well swamp the effects of the tax change on residential investment. The same is likely to be true of other durables that are in relatively greater demand by young families setting up a household.

IMPLICIT TAXATION OF LABOR SUPPLY BY THE SOCIAL SECURITY AND WELFARE SYSTEMS

It is ironic that the social security and welfare programs may, themselves, contribute to the relatively low income levels of the elderly and the poor. Social security and welfare recipients may well face the highest marginal tax rates of any members of our society. These systems provide very small incentives to work. Not surprisingly, therefore, relatively few beneficiaries of these two programs work, especially at full-time jobs.

There is mounting evidence that the social security earnings test has contributed significantly to the dramatic increase in early retirement. In 1950 the labor force participation rate of males 65 and over was 46 percent; today it is only 20 percent. Not only are there fewer older men working on any given day during the year, but there are fewer older men who work at any time during the year. The fraction of men 65 to 69 who are completely retired has risen from 40 percent to 60 percent since 1960. For males 60 to 64 the retirement rate is now 30 percent, double the 1960 figure of 15 percent. Those older males who do choose to work are working fewer hours. Since 1967 the fraction of working males 65 and over who work part-time has increased from one-third to almost one-half. This reduction in work has occurred despite a substantial increase in the general health of people in this age group.

The social security earnings test currently reduces benefits by 50 cents for every dollar of earnings above $6,000 and represents a 50 percent implicit tax for workers aged 65 to 72. In combination with the Federal and State income taxes and the social security payroll tax, this 50 percent tax on earnings penalizes the work effort of the

elderly at rates that can easily exceed 80 percent. These exceedingly large tax rates extend over a wide range of the typical older worker's potential supply of labor hours.

Eliminating the earnings test, as has been proposed by the Administration, would unquestionably increase the incomes of older workers as well as generate tax revenues that would offset a portion of the costs of doing so. Because of impending changes in the demographic structure of the population, it is important to reverse the trend toward early retirement. By the year 2025 the proportion of the population age 62 and over will rise to 24.5 percent, compared to 13.6 percent in 1981. The ratio of workers paying social security taxes to retired beneficiaries will fall from a current level of 3.7 to 2.4. If the work disincentives for older citizens were reduced, U.S. per capita income would rise more rapidly and social security's long-run financial position would be improved.

Current provisions of the social security system also generate work disincentives for a significant fraction of married women. While married women are joining the labor force in increasing numbers, the typical wife's earnings are still one-third to one-half that of husbands. Hence, the marginal tax contributions to social security of many wives will yield them no marginal social security benefits because they will collect benefits based on their husband's earnings record. (This applies only to retirement and medicare benefits. A wife who becomes disabled cannot currently collect disability benefits based on her husband's account.) The combined employer-employee retirement and medicare tax rates total 11.75 percent and represent a pure marginal tax on the work effort of married women. The response to females to the level of net compensation is estimated to be quite high. Hence, the bias in the current structure regarding dependent and survivor benefits may represent a significant disincentive to the participation of married females in the labor force.

Similar work disincentives potentially reduce the labor supply of welfare recipients. Welfare recipients do not face a single and easily understood tax schedule relating their gross earnings to their net disposable income. Instead, they are confronted with eight different and highly complicated implicit and explicit tax schedules. These include the work and income tests of Aid to Families with Dependent Children (AFDC), food stamps, housing assistance, social security insurance and medicaid, the earned income tax credit, the Federal income tax, and State income taxes. Each of the welfare programs has its own eligibility requirements, its own definition of income, its own set of deductions and exclusions, and its own tax rates. These explicit and implicit tax systems differ across States as well. Even within a State, implicit tax schedules vary, depending on both the charac-

teristics of the recipient and the discretion of the social service worker. The result of all this is a complex set of uncoordinated rules and regulations that surely leave welfare recipients confused and dismayed. Past reforms of the system simply added more and more programs, with little emphasis on how the work disincentives of new programs would interact with those of old programs.

The efficacy of any particular income transfer program cannot be determined in isolation from the rest of the system. Analyses of marginal tax rates arising from the combined earnings tests of the various welfare programs and the explicit Federal and State tax systems suggest that typical welfare recipients, namely single mothers with children, face marginal tax rates in excess of 75 percent. Reductions in these very high implicit and explicit tax rates might generate a sufficiently large addition to their labor supply to pay for themselves. As State and local governments assume fuller responsibility for the welfare system, they could effectively offset these high, marginal tax rates by providing additional work incentives.

As this section has shown, many households still face considerable work disincentives, despite the substantial changes enacted in the Economic Recovery Tax Act of 1981. Future reforms of social security and welfare policy should take account of these concerns.

MONETARY POLICY AS A FISCAL INSTRUMENT

The inclusion of monetary policy in a discussion of taxation may seem out of place, but monetary policy is an important instrument of taxation in the U.S. economy. Increases in the supply of money raise revenues for the Federal Government in three ways. First, faster growth of monetary aggregates leads to higher rates of inflation. Since the Federal personal income tax will not be indexed until 1985, inflation will continue to raise real taxes through the process of "bracket creep." Inflation pushes taxpayers into higher marginal tax brackets, although their real incomes may not have changed—i.e., their increase in nominal income may only have kept pace with inflation. Higher inflation rates also raise effective tax rates on capital income earned by corporate and noncorporate business (Table 5–6). This is due to the nonindexation of depreciation allowances, and, in many cases, the reduction in real tax deductions resulting from changes in inventories valued at historic rather than current cost. A reduction in inflation will have the effect of lowering marginal personal income tax rates and effective taxation of capital income.

The second way monetary policy acts as a fiscal instrument involves the interaction between deficit financing by the government and central bank open market operations. In the past the Treasury has paid in part for goods and services, by selling bonds to the

public. When the Federal Reserve purchases Treasury bonds, it increases the monetary base. The net effect of these transactions is that the government acquires goods and services while the private sector is left holding a larger stock of money. The larger stock of money for the same amount of goods and services in the economy translates into a higher price level. The increase in prices then lowers the real purchasing power of the money held by the private sector, and the transfer of resources from the private sector to the government is complete.

A third way in which the government "taxes" the private sector through expansion of the monetary base is that the ensuing higher prices devalue nominal outstanding debt. The real capital losses experienced by the private sector on their holdings of outstanding government liabilities correspond to the real capital gains accruing to the government. Private investors are not, however, so foolish as to purchase government bonds in an inflationary environment without requiring higher interest payments to offset expected real capital losses on the nominal value of these bonds. Given this fact, the government collects real revenues from "watering down" the value of nominal debt only if the actual inflation rate exceeds the rate expected by the private sector. Actual rates of inflation in excess of expected rates appear to have been the case for much of the 1970s.

Standard government accounting procedures fail to record either the increase in base money or the real capital gains on outstanding nominal government debt as sources of financing government expenditures. Even when actual inflation equals expected inflation, an alternative method of bookkeeping would suggest entering the government's real capital gain as revenue, since the higher nominal interest payments required because of expected inflation are entered on the government's books as current real expenditures. The failure to use accounting procedures that recognize the impact of inflation disguises the government's actual method of financing its expenditures.

There are a variety of possible ways of analyzing changes in the government's net liabilities. Table 5-8 presents estimates of changes in the real market value of outstanding Federal net financial liabilities from 1966 to 1980. The table relates changes in the Federal Government's real net financial debt (valued at market prices) in 1980 dollars to the differences between its real expenditures and its real taxes, including taxation associated with money creation.

TABLE 5–8.—*Sources of changes in Federal Government's real net financial liabilities, 1966–80*

[Billions of 1980 dollars]

Year	Expenditures [1]	Sources of Government finances				Change in Federal Government's net financial liabilities [6]
		Tax revenues [2]	Change in monetary base [3]	Revaluation of net financial debt [4]	Other revenue sources plus statistical discrepancy [5]	
1966	331.9	327.7	9.2	7.9	−3.2	−9.7
1967	367.4	337.8	8.3	21.9	−.4	−.2
1968	388.0	374.9	10.1	24.0	−7.5	−13.5
1969	385.1	402.4	6.3	27.4	−4.1	−47.0
1970	396.3	372.3	10.1	−10.3	−.2	24.5
1971	407.6	367.0	13.9	12.1	−2.8	17.4
1972	433.5	403.7	6.0	31.7	−.7	−7.2
1973	443.5	434.1	12.6	46.0	−.8	−48.3
1974	461.9	444.2	9.1	55.9	−.5	−46.8
1975	504.0	406.1	10.2	−5.9	−7.8	101.5
1976	516.8	445.6	8.3	.1	−6.2	68.9
1977	534.9	476.0	15.0	57.0	−11.9	−1.1
1978	544.9	510.3	18.0	73.7	−11.1	−46.0
1979	555.0	538.9	10.4	105.2	−11.7	−87.8
1980	602.0	540.9	9.3	57.8	−2.5	−3.4

[1] Total expenditures, national income and product accounts (NIPA) basis.
[2] Total receipts, NIPA basis, deflated by GNP implicit price deflator.
[3] Changes in the monetary base equal the sum of changes in member bank reserves, vault cash of commercial banks, and currency outside banks, flow of funds accounts.
[4] Capital gains accruing to the Federal Government on its net financial liabilities.
[5] Other revenue sources include Federal sales of mineral rights and household insurance credits and the surplus of federally sponsored credit agencies' flow of funds accounts.
[6] The value of the Federal Government's net financial liabilities equals total liabilities minus financial assets valued at market prices. Liabilities of the Treasury held by the Federal Reserve as well as the social security trust funds are excluded from this series.

Sources: Department of Commerce (Bureau of Economic Analysis); Board of Governors of the Federal Reserve System; Eisner, Robert and Pieper, Paul, "Government Net Worth: Assets, Liabilities and Revaluations (1982)"; and Council of Economic Advisers.

In terms of this accounting framework, taxes associated with money creation—changes in the real monetary base and in the real worth of net financial debt—were quite significant in many of the last 30 years. In 1979, for example, these sources are estimated to have yielded $115.6 billion of real revenues to the government, or 18.0 percent of total 1979 revenue. According to these calculations, in 1979 the Federal Government's real net financial liabilities declined by $87.8 billion. In contrast, using the deflated statistics shown in Table 5–8, the difference between explicit expenditures and explicit tax revenues, was a $16.1 billion increase in government debt.

The estimates in Table 5–8 show that the Federal Government's real net financial assets increased in 11 of the 15 years between 1965 and 1980 in part as a result of the use of money creation to finance its expenditures. Official reports indicated a decline in government debt only in 1969. Given the financial markets' interests in increases in government debt, this approach to analyzing the Federal Government's financial status should be of interest.

While this concept of Federal debt suggests an improving fiscal position over the 1970s, a broader concept of Federal debt discussed in the appendix to Chapter 4 indicates that the Federal Government's total explicit and implicit liabilities have risen enormously over the

last 20 years. The narrower focus of this section and objective of Table 5–7 is to point out that monetary growth raises sizable real taxes for the Federal Government. Monetary growth is a form of taxation. It is an insidious form of taxation. It is taxation that is not legislated by the Congress, it is taxation that is hard to understand, and it is taxation that inhibits economic growth by raising effective marginal tax rates on wages and on saving.

STRUCTURAL TAX POLICY AND ECONOMIC GROWTH

Structural tax policy probably constitutes the Federal Government's most powerful tool for influencing economic growth. If households anticipate their own and their descendants' future tax liabilities, changes in the tax structure generating the same revenue have only "substitution" effects on their decisions; "income" effects are zero or negligible. If households consider only their own future tax liabilities and not those of their descendants, income effects do arise for different age groups, but they are largely offsetting. Such changes in the tax structure do not change household budgets, in the aggregate, but they do change household incentives to work and save. The rate of savings and capital formation can be increased significantly by switching away from taxes on capital income to some other tax base, such as wages or consumption. As described earlier, reductions in the tax rates on capital income reduce the relative cost of future consumption and leisure and encourage the substitution of future consumption and leisure for current consumption and leisure. Such substitution leads to increases in the current supplies of both capital and labor.

The 1981 Tax Act's reduction in marginal tax rates on capital income under both personal and corporate income taxes, the provision for substantial increases in Individual Retirement Accounts and Keogh accounts, and the recent expansion of pension fund savings all constitute major reductions in taxation of capital income. These historic changes in the structure of taxation, assuming they are maintained for the indefinite future, are expected to lead to a significant long-term rise in the private business capital stock and increases in labor supply over what would otherwise be the case.

While capital formation and economic growth are predicted to be enhanced, it should be emphasized that the choice of a tax base should be determined on grounds of economic welfare and efficiency, rather than simply the effect of structural tax change on factor supplies. Economic research suggests that rather sizable efficiency and welfare gains are available from switching from the taxation of wage and capital income to the taxation of consumption. In contrast,

there is evidence that switching from wage and capital income taxation to wage taxation alone can reduce economic welfare and efficiency, even though this structural tax change would lead to more capital formation. In recent years, Federal tax policy has increasingly moved away from marginal taxation of capital income toward an alternative structure that can best be described as a hybrid mixture of wage and consumption taxation.

The change in the structure of taxation will increase labor supply and capital formation over time, provided there is no significant deterioration in the government's real net debt position. While the move away from marginal capital income taxation is necessary to stimulate saving, the Nation still retains a tax system that is overly complex, that is still sensitive to inflation (especially with respect to effective business taxation), that is administratively expensive, and that absorbs too much talent in the fundamentally nonproductive endeavor of what is gently termed "tax planning." In short, there is a need for further simplification and rationalization of the U.S. tax code.