

CHAPTER 4

Increasing Capital Formation

ATTAINING AN ADEQUATE RATE OF CAPITAL FORMATION in the United States is a crucial challenge for economic policy during the 1980s. Devoting a larger share of national output to investment would help restore rapid productivity growth and rising living standards. During the past two decades, fiscal, monetary, and regulatory policies contributed to the low rate of net investment in plant and equipment; the share of gross national product (GNP) devoted to capital formation was below the levels achieved by most other industrialized nations.

The Administration and the Congress have instituted a set of tax and regulatory policies designed to increase the share of output devoted to capital formation. The noninflationary monetary policies followed by the Federal Reserve, with the Administration's support, should also contribute in the long run to increased capital formation and improved efficiency in the allocation of the capital stock. This chapter examines the linkages between economic policy and capital formation, and discusses the rationale for the Administration's initiatives in this area.

Many forms of investment contribute to productivity growth. Research and development expenditures provide the basis for the technological change that is a wellspring of productivity growth. Another major source of productivity growth is investment in education and training that promotes the accumulation of valuable human capital. Public sector infrastructure investments may also have an important role to play. This chapter, however, focuses on nonresidential plant and equipment investment. Past public policies probably discriminated most heavily against this form of investment. Plant and equipment investment is also more amenable to quantitative analysis than other forms of capital investment because of the difficulties involved in measuring intangible capital.

By late 1982, investment and capacity utilization rates in the United States had fallen to very low levels. Even after the recovery from the recession begins, capacity utilization will increase only gradually, and it will take time for new policies to increase the share of national output devoted to saving and investment. Hence, levels of

investment may prove disappointing over the next several years despite the beneficial long-run impact of policies recently put in place. This should not cause us to lose sight of the importance of sound long-run policy and the need to increase net capital formation in the years and decades ahead.

THE HISTORICAL RECORD

Although gross private domestic investment, which includes residential and inventory investment, accounted for 16.1 percent of GNP between 1971 and 1980, gross investment in structures and equipment averaged only 10.8 percent of GNP during this period. Of this gross structure and equipment investment, more than two-thirds was devoted to replacing depreciated capital, leaving only 3.0 percent of GNP for new structures and equipment.

It is useful to place the patterns of investment in the United States during the last decade in historical and geographic perspective. Table 4-1 displays the behavior of alternative measures of capital accumulation. The data show that the rate of net nonresidential fixed investment as a fraction of GNP declined by 27.5 percent between the late 1960s and the late 1970s. The share of output devoted to net nonresidential fixed investment in the late 1970s was slightly lower than the average rate during the entire 1950-80 period.

Some analysts, examining only the data on gross investment, have concluded that investment performance was satisfactory during the 1970s. This procedure ignores the fact that depreciation as a share of GNP was greater during this period than in the 1960s because of a general shift in net investment from long-lived assets, such as structures, toward assets with shorter lives, and because of a higher ratio of capital to GNP. The appropriate focus in examining data on investment is the total stock of capital. Therefore, net investment, which measures the change in the total capital stock, is the most appropriate indicator of the adequacy of capital formation.

An alternative way to evaluate changes in the level of capital formation is to examine trends in the capital-labor ratio. Measures of capital per hour and capital per worker, displayed in Table 4-1 and Chart 4-1, both show a large decline in the growth rate of the capital stock relative to the growth in the supply of labor. Capital per hour increased at only a 0.9 percent annual rate between 1976 and 1980, compared to a 3.5 percent rate during the 1951-75 interval. Although this dramatic decline was in part due to the low rate of net investment during the late 1970s, it was primarily a consequence of the rapid growth of the labor force. To maintain the pre-1975 growth in the capital-labor ratio, a sharp increase in the post-1975

rate of net investment was required, instead of the decline which actually occurred.

TABLE 4-1.—*Alternative measures of capital formation, 1951-82*

[Percent]

| Period | Net private domestic investment as percent of GNP | | Growth rate of net capital stock ¹ | |
|-------------------------|---|---------------------------------|---|-----------------------|
| | Total investment | Nonresidential fixed investment | Per worker ² | Per hour ² |
| 1951-55 | 7.2 | 2.9 | 3.1 | 3.5 |
| 1956-60 | 6.1 | 2.6 | 3.5 | 4.1 |
| 1961-65 | 6.7 | 2.9 | 2.5 | 2.4 |
| 1966-70 | 7.1 | 4.0 | 3.9 | 4.9 |
| 1971-75 | 6.4 | 3.1 | 2.2 | 2.6 |
| 1976-80 | 6.0 | 2.9 | .4 | .9 |
| 1951-80 | 6.6 | 3.1 | 2.6 | 3.0 |
| 1981 | 4.8 | 2.8 | 3.3 | 4.5 |
| 1982 ³ | 2.1 | 2.0 | (*) | (*) |

¹ Real net private nonresidential fixed capital stock at year-end.

² All persons in private business sector. Year-end obtained by averaging fourth quarter value with value for first quarter of subsequent year.

³ Preliminary.

⁴ Not available.

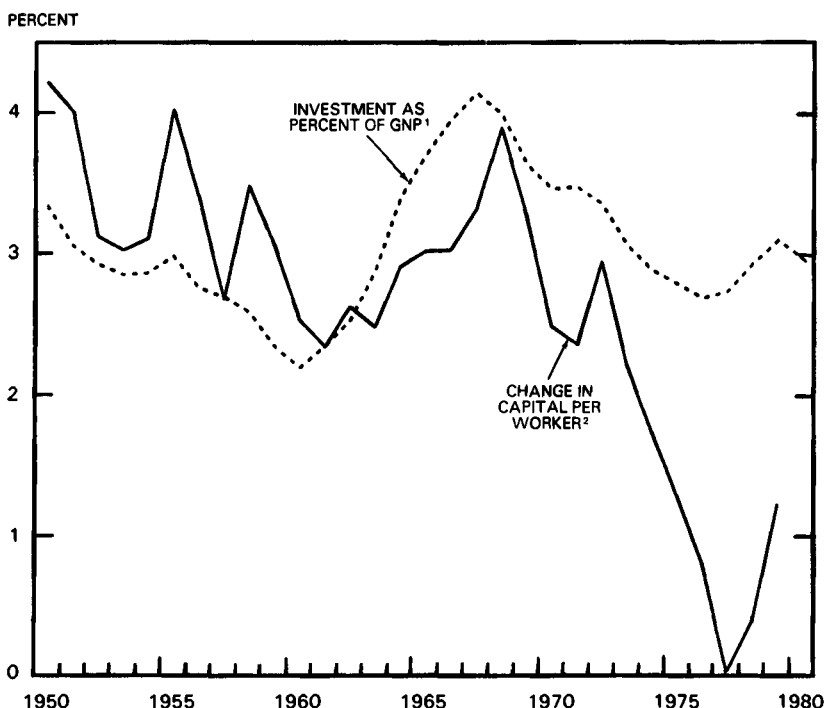
Sources: Department of Commerce (Bureau of Economic Analysis), Department of Labor (Bureau of Labor Statistics), and Council of Economic Advisers.

Properly measured, the decline in the growth rate of the capital stock is understated by the net investment figures in Table 4-1. The energy price shocks of 1973 and 1979 hastened the obsolescence of a variety of past investments, which implies that actual depreciation was greater than the official statistics suggest. One estimate placed the premature obsolescence of capital during the late 1970s at an average of 0.5 percent of GNP per year. Other studies have obtained much larger estimates using data on the market valuation of capital. In addition, it is important to recall that much of the investment of the 1970s took place in the energy-producing sector. The share of GNP devoted to net fixed nonresidential investment outside the energy sector averaged only 1.8 percent between 1975 and 1980.

Unfortunately, the combined effects of the recent economic recession and large Federal budget deficits will hold down the rate of capital formation, as currently forecasted, over the next several years. Between 1981 and 1985, net investment in plant and equipment may prove disappointing even by the standard of the late 1970s. The capital-labor ratio will grow only slowly and may even decline. While the low forecasted rate of net investment over the next several years is due primarily to cyclical conditions, it does not negate the importance of developing permanent policies to encourage capital formation. In light of the depth of the recent recession, it is reasonable to expect that investment performance probably would have proven

Chart 4-1

Measures of Capital Formation



¹ NET PRIVATE NONRESIDENTIAL FIXED INVESTMENT AS PERCENT OF GNP; FIVE-YEAR CENTERED MOVING AVERAGES.

² PERCENT CHANGE IN REAL NET PRIVATE NONRESIDENTIAL FIXED CAPITAL STOCK PER WORKER IN THE BUSINESS SECTOR; FIVE-YEAR CENTERED MOVING AVERAGES.

SOURCES: DEPARTMENT OF COMMERCE, DEPARTMENT OF LABOR, AND COUNCIL OF ECONOMIC ADVISERS.

worse if the Congress and the Administration had not enacted tax measures to spur capital formation. These laws, and the proposals incorporated in the President's fiscal 1984 budget, are designed to raise the share of net investment to a high level by historical standards in the late 1980s or before.

AN INTERNATIONAL PERSPECTIVE

Table 4-2 shows that the United States falls behind other major industrial nations in several key measures of net capital formation. The share of U.S. gross domestic product (GDP) devoted to net fixed investment during the last decade was only 34 percent of the compa-

rable share in Japan and 56 percent of the comparable share in West Germany. No other major industrial nation devotes as small a fraction of total output to new investment as does the United States.

TABLE 4-2.—*Comparison of capital formation in six OECD countries, 1971-80*

[Percent]

| Country | Investment as percent of GDP | | | Growth rate of output per hour in manufacturing |
|---------------------|------------------------------|------------------------|----------------------|---|
| | Gross investment | Gross fixed investment | Net fixed investment | |
| France..... | 24.2 | 22.9 | 12.2 | 4.8 |
| Germany..... | 23.7 | 22.8 | 11.8 | 4.9 |
| Italy..... | 22.4 | 20.1 | 10.7 | 4.9 |
| Japan..... | 34.0 | 32.9 | 19.5 | 7.4 |
| United Kingdom..... | 19.2 | 18.7 | 8.1 | 2.9 |
| United States..... | 19.1 | 18.4 | 6.6 | 2.5 |

Source: Organization for Economic Cooperation and Development.

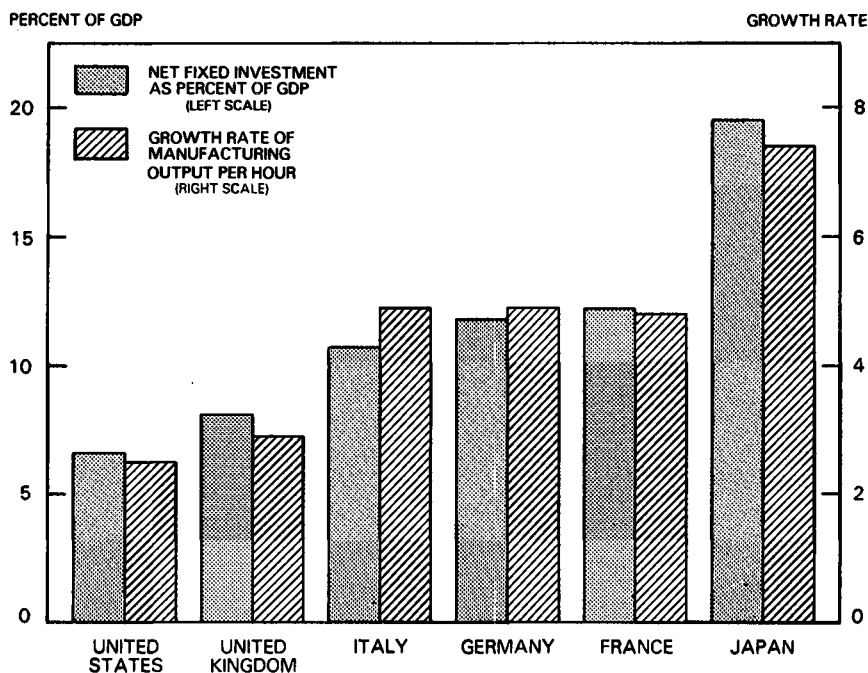
It is instructive to compare the growth rates of productivity for different countries with their shares of output devoted to new investment. Although productivity growth and investment rates are simultaneously determined by a multitude of factors, it is striking that a strong positive relationship emerges. As shown in Chart 4-2, Japan has both the highest investment share and the highest growth rate of productivity, while the United States has the worst investment performance and the lowest growth rate of productivity.

While the reasons for these large international differences in rates of capital formation are not precisely understood, some evidence suggests that the roots may lie in different public policies. After World War II, rebuilding of the capital stock was a primary goal of economic policy in continental Europe and Japan. Governments in those countries encouraged saving and investment and disregarded the early Keynesian fear that oversaving could reduce aggregate demand and depress real economic activity.

In contrast, officials in the United States feared a postwar relapse into depression and avoided policies which would encourage saving. For example, some economists advocated sustained budget deficits as a means of absorbing excess private savings.

It is now clear—on the basis of four decades of economic experience since the end of the Great Depression—that fears of secular stagnation caused by a high and rising saving rate are unwarranted. The much greater risk is that productivity growth in the United States will continue to stagnate at low levels, and that American workers will have to accept a lower growth rate in their standard of

International Comparison of Investment and Productivity Growth, 1971-80



SOURCE: ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT.

living than their foreign counterparts. Otherwise, American goods could cease to be competitive on world markets.

THE IMPORTANCE OF CAPITAL FORMATION

The case for increasing the rate of capital formation ultimately rests on three justifications. First, increased capital formation can reverse part of the productivity slowdown that the United States has suffered during the last decade. Second, government policies have discriminated in favor of consumption and against saving and investment. Third, as a result of tax policies, the pretax return to capital investment exceeds the after-tax return that any individuals are able to capture privately, leading to an inappropriately low level of capital formation.

During the 1970s, productivity growth in the United States decelerated rapidly. Between 1948 and 1967 the growth rate of productivity (as measured by output per hour in the private business economy) was 3.1 percent, compared to 2.3 percent between 1967 and 1973 and only 0.8 percent between 1973 and 1981.

The consequences of reduced productivity growth for our standard of living over the long run are greater than those of any other current economic problem. In 1981 the American economy produced approximately \$12,780 worth of output per capita. Had productivity growth continued at the 1948-67 rate during the 14 years subsequent to 1967, output per capita would have reached \$16,128 in 1981, 26 percent higher than the actual value. As a standard of comparison, the recent recession reduced per capita output by only 4 percent between the third quarter of 1981 and the fourth quarter of 1982, less than one-fifth the reduction attributable to the productivity shortfall. As time passes, the consequences of reduced productivity growth are compounded. Increasing the productivity growth rate by 2 percentage points annually would more than double our material standard of living by 2020, compared to the level it would reach otherwise.

The productivity slowdown is not reliably attributable to any single cause or combination of causes. Various analysts have suggested that higher energy prices, regulatory changes, reduced research and development spending, reduced opportunities for technical innovation, the changing composition of the labor force, and changing worker attitudes, as well as reduced capital formation, are responsible for the productivity slowdown. An accurate accounting of the sources of the slowdown is probably impossible in light of the multitude of competing explanations and the statistical difficulties associated with distinguishing between their relative effects precisely.

Many of the possible causes of the productivity slowdown are probably not reversible through public policy. There is relatively little the Federal Government could have done to offset the negative effect of sharp increases in oil prices or, for that matter, to influence changing cultural attitudes toward work. Changing the rate of capital formation, however, is a principal way in which Federal economic policy can affect productivity growth.

Increasing the rate of capital formation will raise productivity growth in several ways. More rapid capital formation results, on average, in workers having more equipment at their disposal. In addition, increases in investment reduce the average age of the capital stock, permitting physical assets to embody more recent technological innovations. Technological development and the level of capital formation are intertwined, because the development of more efficient and

sophisticated capital goods occurs when the demand for new capital goods increases.

The legacy of past policies, which have artificially depressed saving and investment, provides a second reason for increasing the rate of capital formation. As described below, this discrimination against capital formation has taken many forms, including tax policy, monetary policy and recurring Federal budget deficits. Although there exist instances of market failure, a market economy can generally be expected to allocate resources in an efficient way. When public policies systematically discriminate against one type of spending, however, there is a strong presumption that too little of it will take place.

A related and final justification for increased capital formation comes from a comparison of the total pretax return to investment with the return received by private investors. Estimates suggest that the total pretax return to investment in corporate capital, as measured by its pretax marginal product, is about 11 percent. This means that \$1.00 invested today yields society \$1.11 next year, or alternatively a permanent yield of 11 cents. While the total pretax return fluctuates from year to year with cyclical conditions, studies have tended to find that it has stayed within the range of 8 to 15 percent throughout the postwar period.

In contrast, private investors have earned much smaller rates of return over the last several decades, with many investors earning negative real after-tax returns over much of that period. Even leaving aside the effects of personal taxes, the real return on short-term debt instruments averaged less than 1 percent during the 1950-81 interval. While equity investments have yielded a higher average return, they carry with them a large amount of risk. The average real return on common stock before personal taxes was 6 percent over the 1950-81 period, but investors lost money in real terms in 12 of those years and over periods as long as 17 years.

This large spread between the total and private returns to investment is a consequence of the tax system, which extracts a portion of the total return to investment before it reaches private investors. Capital market returns are reduced because the corporate income tax reduces the return that corporations can pay out to investors. As a consequence of this tax-induced divergence between the private and total return to investment, too little investment takes place. This suggests the desirability of measures both to reduce tax distortions and to increase incentives to save and invest.

MEASURING NATIONAL SAVING

Domestic saving is an important determinant of a nation's level of investment. Economic output is either invested in capital assets, which help produce future output, or consumed privately or publicly. Only by forgoing consumption does it become possible for a nation to invest in a sustained way. While funds from abroad are available to finance some investment, experience suggests that most mature economies have financed investment through domestic saving. Increasing the rate of capital formation in the United States without increasing obligations to foreigners therefore probably requires increased national saving.

Table 4-3 provides information on net national saving as reported in the national income and product accounts. On average, from 1951 to 1981, the United States saved 6.7 percent of total output beyond that necessary to replace depreciated capital. Private saving, comprising personal saving and corporate retained earnings, totaled 7.3 percent of GNP. Federal Government dissaving through budget deficits averaged 0.9 percent of GNP, while the sum of State and local government surpluses averaged 0.3 percent of GNP.

TABLE 4-3.—*Net saving as percent of GNP, 1951-81*
[Percent]

| Period | Total | Not adjusted for inflation | | | Adjusted for inflation * | | |
|--------------|-------|----------------------------|-----------------|----------------------|--------------------------|-----------------|---------|
| | | Federal | State and local | Private ¹ | Federal | State and local | Private |
| 1951-55..... | 6.7 | -0.3 | -0.1 | 7.2 | 0.9 | -0.1 | 5.9 |
| 1956-60..... | 6.9 | .0 | -.2 | 7.1 | 1.1 | -.1 | 5.9 |
| 1961-65..... | 7.4 | -.4 | .0 | 7.8 | .2 | .2 | 7.0 |
| 1966-70..... | 7.5 | -.6 | .1 | 8.0 | .6 | .4 | 6.5 |
| 1971-75..... | 6.4 | -1.8 | .6 | 7.6 | -.3 | 1.1 | 5.6 |
| 1976-80..... | 5.8 | -1.9 | 1.2 | 6.5 | -.2 | 1.6 | 4.4 |
| 1981..... | 5.0 | -2.0 | 1.1 | 5.9 | .0 | 1.5 | 3.6 |
| 1951-81..... | 6.7 | -.9 | .3 | 7.3 | .4 | .6 | 5.8 |

¹ Private saving less capital consumption allowances with capital consumption adjustment.

*Adjusted by GNP implicit price deflator.

Sources: Department of Commerce (Bureau of Economic Analysis), Board of Governors of the Federal Reserve System, and Council of Economic Advisers.

While the total saving rate can be measured unambiguously, there are serious conceptual problems in measuring its various components during an inflationary period. Inflation erodes the real value of the national debt. Interest rates incorporate inflation premiums and these premiums compensate lenders for the fact that they are repaid in cheaper dollars. Thus, they do not really represent income to borrowers or costs to lenders. This principle is recognized by the Financial Accounting Standards Board and is often applied in the private sector. Table 4-3 therefore also presents a breakdown between pri-

vate, Federal, and State and local government saving that is adjusted for the effects of inflation.

BUDGET DEFICITS AND SAVING

Unacceptably large Federal budget deficits are likely in the next several years unless legislative changes are made. These deficits could significantly reduce investment during the economic recovery. Increased public consumption with no reduction in private consumption leaves fewer resources available for investment. When the Federal Government must compete with private borrowers for savings, real interest rates are bid up, discouraging investment.

Federal dissaving would not represent a serious problem if it automatically called forth more private saving. While increased deficits do not induce an equal increase in private saving, they also do not crowd out investment expenditure dollar for dollar. Increases in the real rate of return caused by Federal deficits raise the yield savers receive and may call forth some additional private saving. Higher real interest rates also discourage spending on consumer durables, housing, and construction by State and local governments. Finally, by contributing to increases in real interest rates, budget deficits encourage capital inflows from abroad. These factors imply that deficits do not completely crowd out private investment; rather, a reasonable estimate is that funds available for private investment are reduced by perhaps one-half to three-fourths of the budget deficit.

The possibility that Federal budget deficits crowd out private investment takes on greater importance in light of the large deficits that will occur over the next 5 years unless actions are taken. The fiscal 1982 budget deficit of \$110.7 billion absorbed 3.65 percent of GNP. Projections now suggest the 1983 deficit will equal \$207.7 billion or 6.5 percent of GNP. Unless significant actions are taken, deficits of this magnitude or larger may continue even as the economy recovers from the recent recession. If such deficits materialize, the consequences for capital formation could prove very serious unless a dramatic increase in private saving also takes place. A budget deficit of 5 percent of GNP would likely reduce net investment by an amount equal to about one-half its historical level, relative to a balanced budget. With large deficits, significant improvements in labor productivity and the quality and quantity of housing would be less likely in the years ahead.

TAX RULES AND PERSONAL SAVING

Many economists believe that tax rules in the United States encourage consumer borrowing and discourage private saving. During the 1970s the combination of tax rules and inflation produced a dramatic decline in the private return to saving and a large reduction in the cost of borrowing.

During the 1960s, nominal interest rates on 3-month Treasury bills averaged 4.0 percent, and the consumer price inflation rate averaged 2.3 percent. On a pretax basis, this left savers with an average real return of 1.7 percent. For a saver in the 30 percent marginal tax bracket, the real after-tax return was only 0.5 percent.

The return to saving fell significantly below this level during the 1970s. While the average inflation rate rose to 7.1 percent, the average interest rate increased to only 6.3 percent. This caused a decline in the real interest rate measured on a pretax basis and a larger decline in the average after-tax rate (for a person in the 30 percent bracket) from 0.5 percent to -2.7 percent.

The return to saving has fallen because of corporate taxes as well as individual taxes. Corporate income taxes decrease the returns corporations can afford to pay to the holders of their securities. As described below, these tax burdens also increased substantially during the 1970s. In addition, corporate taxes reduce the amount of funds that corporations can retain for reinvestment.

At the same time that tax rules have reduced the return on savings, they have encouraged dissaving through borrowing. Because consumer interest payments are tax deductible, taxpayers who itemize their deductions are encouraged to use credit to finance their purchases of consumer durables and other goods. As inflation increased during the 1970s, the real after-tax cost of borrowing declined and eventually became negative. Indeed, in the first quarter of 1980 the real after-tax cost of borrowing for a taxpayer in the 30 percent bracket was -1.2 percent. The encouragement of borrowing to finance purchases of durable goods probably reduced the aggregate saving rate substantially during the 1970s.

The tax reforms supported by the President in 1981 and enacted by the Congress were designed to increase saving. Reductions in marginal tax rates raise the after-tax return to saving and the after-tax cost of borrowing. The Economic Recovery Tax Act of 1981 will reduce the marginal tax rate facing a median income family in 1984 from 28 percent, which would have occurred under pre-1981 law, to 22 percent. The act immediately reduced the marginal tax rate on high income taxpayers, who account for a large fraction of personal saving, from 70 to 50 percent.

The Economic Recovery Tax Act of 1981 also contained several other provisions directed specifically at encouraging private saving. The Individual Retirement Account (IRA) provisions in the tax code were extended to cover the entire working population. Working individuals are now permitted to make a yearly tax deductible contribution of \$2,000 to finance consumption during retirement. Taxes are only paid when the funds plus accumulated interest are withdrawn from the IRA. Private estimates suggest a substantial response to this legislation, with about \$10 billion placed in IRAs during 1982. A crucial issue in evaluating the efficiency of IRAs is their effectiveness in raising saving incentives on the margin. Some critics have argued that IRAs do not provide an incremental incentive for saving because contributors can simply transfer funds from other sources without increasing total savings. While this occurs to some extent, it is certainly not universal and will decrease in the future as contributors exhaust their funds available from other sources. The fragmentary evidence available from private sources suggests that more than half of all IRA contributors contribute less than the maximum amount allowable, indicating that they do face increased saving incentives on the margin.

The 1981 tax legislation also provided for an interest exclusion starting in 1985, allowing individuals to exclude 15 percent of their net interest income up to a limit of \$3,000. This will also raise the return to savings and spur capital formation. Extending the exclusion to dividends as well as interest payments would reduce the tax bias favoring debt over equity as a source of corporate finance.

The 1981 tax act also raised the return to saving by reducing the top marginal rate on capital gains from 28 percent to 20 percent. This reform partially compensates for the serious distorting effect of inflation on the measurement of capital gains. Because of inflation, an owner of an asset that experiences no real appreciation will nevertheless become liable, at the time of sale, for taxes on the nominal appreciation of the asset. Complete elimination of this distortion would require indexation for inflation in the measurement of capital gains.

In recent years support has grown among economists and other tax experts for moving the tax system toward taxation of consumption and away from taxation of income. This change might entail expanding the existing exclusions of interest and dividend income and those mechanisms, such as IRAs, which permit tax-deferred accumulation of savings. It might also involve limiting the deduction of interest expenses for consumer borrowing. Movement toward taxation of consumption is supported by some advocates on the grounds that taxing individuals on what they take from the economy is "more fair" than taxing what they contribute to the economy. A tax system based

on consumption taxation might also prove easier to administer than the current system because it would eliminate many of the problems involved in measuring certain types of capital income.

FINANCIAL REGULATION AND PRIVATE SAVING

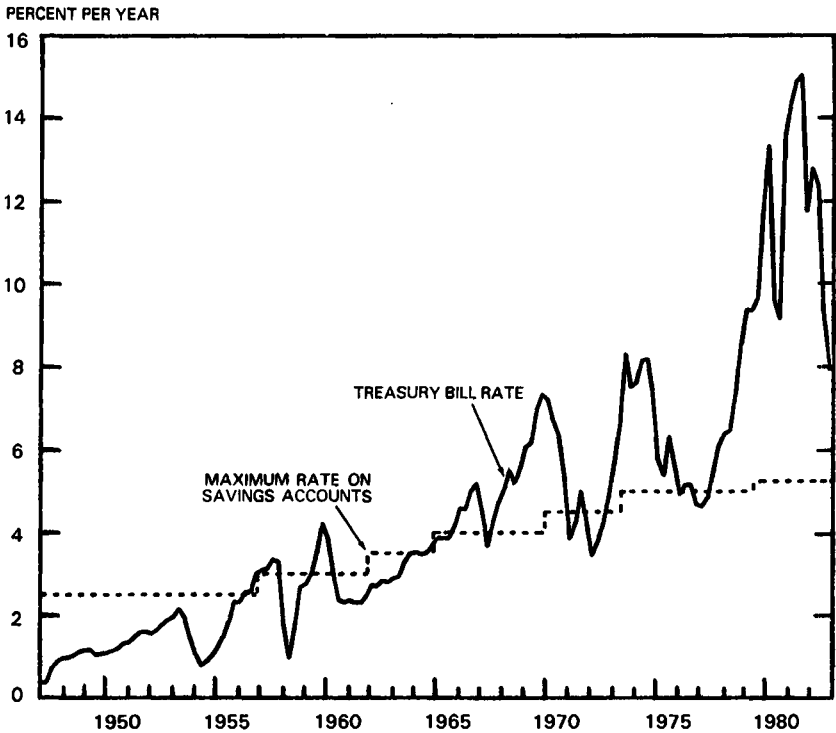
An additional set of public policies that has probably discouraged private saving over the last several decades is the regulation of financial institutions. As Chart 4-3 shows, small savers holding savings accounts subject to Regulation Q have received below market rates of interest, and holders of checking accounts have received even lower rates of interest. These low returns are largely consequences of regulations limiting the interest rates financial institutions may pay on customer deposits. As late as 1980, the spread between Treasury bill rates and the yield on savings deposits subject to Regulation Q was as great as 8 percent.

The adverse effects of financial regulations on personal saving have probably lessened considerably in recent years, due to both private and public actions. In the private sector, the development and explosive growth of money market funds has made it possible for most high and middle income savers to receive market rates of interest. Legislation adopted in 1982 with Administration support has allowed commercial banks and thrift institutions to offer financial instruments with competitive interest rates to a wide range of depositors.

The Administration has strongly supported removal of the many unnecessary regulations that have impeded competition in the financial services industry. As discussed in more detail in Chapter 5, the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Depository Institutions Act of 1982 have played important roles in beginning this process of deregulation. Banks and thrift institutions can now offer insured accounts that are competitive with money market funds in terms of both the interest rates they pay and the services they provide, thereby increasing incentives for saving.

A related development has occurred in the Federal Government's policies regarding U.S. Savings Bonds. Savings bonds have historically paid low rates of return. In 1980, 10-year Treasury bonds paid 11.5 percent, while Series EE Savings Bonds paid an annual yield of only 7 percent from issue to maturity 11 years later. Because of legislation recently proposed by the President and passed by the Congress, the return on savings bonds is now based on market rates. Between November 1, 1982, and April 30, 1983, for example, U.S. Savings Bonds will earn 11.09 percent if they are held at least 5 years. Apart from making saving more attractive to savings bond purchas-

Three-Month Treasury Bill Rate and Regulation Q Maximum Rate on Savings Accounts



SOURCE: BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM.

ers, the new rates on Series EE bonds are desirable on equity grounds because small savers can now obtain yields close to those received by their higher income counterparts.

THE ROLE OF INTERNATIONAL CAPITAL FLOWS

It is likely that budget deficits, tax policies, and ceilings on bank interest rates have contributed to the lower net saving rates which the United States has experienced in recent years. In theory, however, this low level of saving need not have strictly limited the level of funds available for investment. Funds from abroad can also finance investment in the United States. The link between domestic investment and domestic saving is not absolute.

Nevertheless, a number of economic studies cast doubt on the proposition that the United States could offset low domestic saving rates through sustained borrowing from abroad. These studies have found a consistently high correlation between rates of domestic investment and domestic saving in the major industrialized countries. While the reasons for these results are not well understood, they may reflect the high information costs and serious monitoring difficulties associated with holding foreign investments. Whatever the exact reason for the historically high correlation between domestic saving and investment, it suggests that increasing the rate of investment in the United States significantly will probably require policy measures which increase domestic saving.

Insofar as savings from abroad are available for investment in the United States, it is not clear that they provide a desirable substitute for domestic saving. Throughout most of the postwar period, the United States was a net exporter of capital. However, the United States has recently experienced a large surplus in its capital account and incurred a large offsetting deficit in its current account. This has entailed large merchandise trade deficits, with deleterious impacts on U.S. export industries and those domestic industries which compete with imports.

THE ALLOCATION OF CAPITAL

With only a relatively small fraction of GNP available to finance investment, and with large budget deficits looming over the next few years, the allocation of capital in the United States among alternative uses takes on added importance. In addition to holding down the rate of national saving, previous fiscal and monetary policies have tended to alter the allocation of capital investment, favoring housing, consumer durables, and State and local construction at the expense of business investment. Inflation, caused by overly expansionary monetary policies, and taxes interact to affect the incentives on different kinds of investments. While a sound economic recovery will boost saving sufficiently to provide for increases in all forms of investment, eliminating tax-induced distortions in the allocation of capital would also aid in regaining a rapidly rising standard of living.

It is useful to examine how the tax structure has very different effects on alternative forms of investment. The income from investments by corporations is taxed at both the individual and the corporate level. Corporate profits are taxed as they are earned. When these profits are received by shareholders in the form of either dividends or capital gains, they are taxed again. By contrast, the implicit returns from most other forms of investment remain untaxed. The

services to investors in owner-occupied housing and consumer durables are largely untaxed.

The bias in our tax system against corporate capital investment was exacerbated during the 1970s by the effects of inflation. Corporations are permitted to take depreciation allowances based on historic rather than replacement costs for tax purposes. Thus, as the rate of inflation increases, the real value of depreciation allowances decreases, and the tax burden as a share of real profits rises. Another source of inflation-induced corporate tax increases is that inflation causes "phantom" gains in the value of inventories, raising taxes for firms using the first-in, first-out method of inventory valuation. One study estimated that the tax law's use of historic costs rather than replacement costs for depreciation purposes raised corporate tax payments by \$19.1 billion in 1977, and raised tax burdens for corporations using first-in, first-out inventory accounting by \$7.0 billion. Although these tax increases were partially offset because corporations deduct nominal rather than real interest payments in calculating their taxable income, the gains at the corporate level from the deductibility of nominal interest are offset to some extent by losses from taxation of the inflation component of interest rates at the individual level.

The effects of the interaction of taxes and inflation reached dramatic proportions during the 1970s. Increased taxation led to large market revaluations of corporate and noncorporate capital assets. The "q ratio," which measures the market value of capital in the nonfinancial corporate sector relative to its reproduction cost, fell from 1.09 in 1970 to .67 in 1980. The price of single-family nonfarm dwellings relative to the price of consumption goods rose by 29 percent during the same period. During the last 2 years of falling inflation, however, the q ratio rose to about .80 in the fourth quarter of 1982, and the relative price of single-family nonfarm dwellings fell by 5.3 percent.

The supply of different types of capital goods ultimately depends on their relative prices. The observation that reductions in inflation are associated with changes in the relative prices of different capital goods suggests that the reductions in inflation are likely to cause a reallocation of capital toward plant and equipment investment and away from investments in consumer durables and housing. These shifts simply reflect the reduced magnitude of the biases caused by our current tax system in periods of inflation.

TAX POLICY AND INVESTMENT

In 1981 the Congress instituted the accelerated cost recovery system as part of the Economic Recovery Tax Act. This tax legisla-

tion permitted businesses to depreciate most purchases of equipment according to an accelerated 5-year schedule. It also permitted businesses to depreciate structures over 15 years using a 175 percent declining balance schedule. The Economic Recovery Tax Act preserved the investment tax credit on equipment and called for further accelerations in depreciation schedules in 1985 and 1986.

The 1982 Tax Equity and Fiscal Responsibility Act altered the provisions of the Economic Recovery Tax Act by instituting a half-basis adjustment for investment tax credits in calculating depreciation and by eliminating the planned further accelerations in depreciation schedules. Table 4-4 shows the present value of the depreciation deductions and investment tax credits received by a corporation under the old accelerated depreciation system, Economic Recovery Tax Act (ERTA) rules and Tax Equity and Fiscal Responsibility Act (TEFRA) rules. The present value is calculated for a variety of hypothetical combinations of discount and inflation rates.

TABLE 4-4.—Investment incentives ¹ under different tax laws
[5-year property]

| Real interest rate | Tax law | Inflation rate (percent) | | | |
|--------------------|-----------------------------|--------------------------|------|------|------|
| | | 4 | 6 | 8 | 10 |
| 1 percent..... | Pre-ERTA ² | .495 | .473 | .454 | .436 |
| | ERTA | .516 | .500 | .486 | .472 |
| | TEFRA | .495 | .480 | .466 | .454 |
| 4 percent..... | Pre-ERTA ² | .462 | .444 | .427 | .412 |
| | ERTA | .492 | .478 | .465 | .452 |
| | TEFRA | .472 | .459 | .446 | .435 |
| 7 percent..... | Pre-ERTA ² | .435 | .419 | .404 | .390 |
| | ERTA | .471 | .458 | .446 | .434 |
| | TEFRA | .452 | .440 | .428 | .418 |
| 10 percent..... | Pre-ERTA ² | .412 | .397 | .384 | .372 |
| | ERTA | .452 | .440 | .429 | .418 |
| | TEFRA | .435 | .423 | .412 | .402 |

¹ Present value of depreciation deductions and investment tax credits per dollar of investment.

² Assumes depreciation over 9.5 years using double-declining balance switching to sum of years digits.

Source: Council of Economic Advisers.

Three qualitative conclusions emerge from these calculations. First, current tax laws provide significantly more stimulus to most categories of investment than did the pre-1981 law. Second, the reduction in inflation that has occurred during the past 2 years has also increased substantially the value of the depreciation allowances. Third, even with a relatively short 5-year cost recovery period, the value of the investment incentives remains quite sensitive to the anticipated rate of inflation.

In considering the economic effects of tax policies on investment, it is crucial to distinguish between measures which apply only to new investment, such as accelerated depreciation and the investment tax credit, and measures which reduce the tax burden on all kinds of

capital income, such as corporate rate reductions. These two types of investment incentives produce very different economic effects. Measures which apply only to new investments affect only marginal investment decisions; no tax benefit is conferred on the owners of existing capital. Therefore, in the short term more investment is stimulated per dollar of immediate revenue loss than would prove the case if the tax benefit were conferred on all capital. The tax legislation enacted in 1981 relied on tax incentives for new investments.

Incentives for new investment are viewed by some observers as benefiting primarily large wealthholders, but the reality may be different. Since measures like the accelerated cost recovery system reduce the effective cost of purchasing new capital goods, they are likely to reduce the value of the old capital goods with which they compete. For example, a subsidy for the purchase of new cars will reduce the value of used cars. Likewise, reduced taxation of new investment may temporarily reduce the level of stock market prices, which in part reflects the market's valuation of existing capital. Thus, investment incentives like those recently enacted, while raising the rate of return on new investments, may actually hurt holders of existing wealth. Workers should benefit as greater capital accumulation raises their productivity and wages. The effect on the distribution of income is ambiguous and might even prove progressive.

Beginning with the enactment of the accelerated depreciation provisions in 1954, policy has tended to rely on investment incentives that stimulate new investment and do not benefit existing investments. This continued reliance on measures that benefit new capital at the expense of existing capital carries a subtle but real risk. As investors come to anticipate this pattern of public policy, they may take into account expected future changes in tax laws as they make investment decisions. This might have an unintended effect. Investors who expect capital losses are less likely to invest. Stated differently, if the effective purchase price of new capital goods is expected to decline because of tax reforms, there will be a tendency to defer investments. This suggests that in designing future reforms it may be desirable to consider reducing taxes on existing as well as new capital.

While current tax law provides significantly more stimulus to investment than did earlier law, there is room for further reform. The value of depreciation allowances is still dependent on the rate of inflation, increasing the uncertainty of investment decisions. The acceleration of depreciation allowances has substantially reduced the burden of the corporate income tax, but investment in plant and equipment is still discouraged by taxes on dividends and capital gains.

A final problem under current tax law is the treatment of corporate losses. Because of low profits due to cyclical conditions, or large depreciation write-offs, many corporations do not have taxable income in some years, reducing the efficacy of investment incentives during those periods.

CONCLUSIONS

The tax programs put in place in the last 2 years should play an important role in increasing capital formation in the United States. Yet, much more can be done to ensure a rapidly growing standard of living in coming years. It is crucial that we take action to reduce large Federal deficits and to further stimulate private saving and investment.

In considering the issue of capital formation, policymakers should take a long view. The reasons for increasing capital formation primarily involve long-run growth rather than current economic conditions. We should not allow the poor performance of investment during a period of recession and high deficits to blind us to the importance of policies that can help us achieve sustained and rapid economic growth in the years to come.