FRBSF Weekly Letter

A "Supply-Side Miracle"?

The U.S. economy is experiencing an investment boom in plant and equipment of major proportions. Nonresidential fixed investment set a postwar record by growing at a 16.8 percent annual rate during the first six quarters of the current expansion. More importantly, investment spending also reached a record high in relation to current levels of GNP. Nonresidential fixed investment has averaged 11.5 percent of GNP in the current expansion, compared to an average of 9.5 percent of GNP in earlier business cycle upswings.

Have the tax incentives for business investment provided in the Economic Recovery and Tax Act of 1981 caused the current investment boom? This *Weekly Letter* presents evidence showing that any reduction in the cost of investment created by these new tax incentives has been offset by recent increases in real interest rates.

Possible explanations

Various explanations have been advanced for the current investment boom in plant and equipment. One is based on the momentum of the recovery from the 1981-82 recession which was quicker than normal and thus may have created a greater need to expand capacity. However, real GNP grew by a 7.2 percent annual rate in the first 6 quarters of this expansion, compared to an average rate of 6.8 percent in previous postwar expansions; and the speed of the decline in real GNP during the prior recession was no more than average. These differences are not great enough to explain the large disparity in investment behavior. Nor can the strength of investment spending simply be explained by a relatively low level in the prior recession. The ratio of investment spending to GNP was not any lower than usual for a recession.

Two other explanations have more validity. Since the cyclical expansion of the mid-1970s, many new forms of "high-technology" investment have become available in the areas of electronic equipment, communications gear, and office machines. Since these investments allow firms to cut costs by using new technologies, they can be highly profitable even if the financial cost of investment is greater than normal. According to unpublished data compiled by the Commerce Department, such "high tech" investment has recently taken a quantum leap, jumping from 25 percent to nearly 50 percent of total investment since 1978. Since most "high tech" investment takes the form of equipment, this explanation is consistent with the below-average ratio of investment in structures to GNP at the same time that the ratio of investment in equipment to GNP has been at a postwar high.

A second explanation for the current investment boom in plant and equipment is the obsolescence of the capital stock. Higher energy prices in the 1970s, as well as regulations to reduce pollution and enhance occupational safety, made production facilities that had been regarded as fully competitive in an earlier environment relatively inefficient. If, as demand increases during an expansion and older facilities are brought into use, the cost of running them exceeds the cost of investing in new capital, then investment is stimulated.

The most widely discussed possible explanation of the current investment boom is the potential effect of the tax cuts for business provided in the Economic Recovery Tax Act of 1981. This Act substantially reduced effective tax rates on the capital cost of business fixed investment without changing the corporate income tax rate. First, an Accelerated Cost Recovery System (ACRS) replaced the previous system of basing tax lives on expected useful lives. For most assets the new tax lives are considerably shorter than their economic lives. Second, the 1981 Act increased the value of investment tax credits for investment in equipment. The Tax Equity and Fiscal Responsibility Act of 1982 took back a portion of these cuts as part of a package to reduce the size of the federal budget deficit, but its net effect on tax incentives for business was relatively minor.

Whether the tax cuts for business are actually generating the investment boom in plant and equipment depends upon whether the incentives they provide have been offset by higher real interest rates. If the amount of available saving were fixed and other kinds of investment had received equal tax breaks, interest rates would have to rise to an exactly offsetting extent in order to ration

the given amount of saving. But interest rates need *not* have increased to this extent since several other kinds of investment (such as consumer durables, owner occupied housing and foreign investment) did not get equal tax breaks. With a given amount of saving, business fixed investment would then gain at the expense of other types of investment.

The pressure on interest rates would be further reduced to the extent that the supply of private domestic saving was augmented by tax incentives or inflows of foreign saving. But the pressure would be increased if other factors were simultaneously contributing to larger federal budget deficits, which represent a reduction in governmental contributions to total saving. Although the 1981 Act reduced the average marginal tax rate for individuals by several percentage points (after taking into account the effect of "bracket creep"), there has actually been no perceptible increase in the private saving rate. Instead, the main effect of cutting personal income taxes has been to create large losses in revenue and therefore further reductions in government saving. The result has been a substantial upward pressure on real interest rates.

Tax incentives vs. real interest rates

The real cost of capital investment, including the effects of taxes, can be measured with an approach developed by Professors Robert Hall and Dale Jorgenson. In their method, the real cost of capital has three main determinants besides debt and equity costs: (1) the tax rate on corporate profits, which is applied to returns on equity capital, (2) deductions allowed for depreciation, and (3) an investment tax credit of up to 10 percent of the original cost for expenditures on equipment, but not for structures. The present economic value of depreciation allowances varies inversely with the life of the investment for tax purposes and also inversely with nominal interest rates. The economic value of depreciation allowances and that of the investment tax credit have varied substantially over the post-war period due to changes in the tax law and variations in nominal interest rates.

The real cost of capital investment in the Hall and Jorgenson formula is equal to a weighted average of real debt and equity costs plus the physical rate of depreciation, all multiplied by one plus the effective tax rate. The effective tax rate is influenced by the economic value of depreciation al-

lowances and the investment tax credit, as well as the corporate income tax rate itself. The accompanying chart shows the behavior of the Hall and Jorgenson measure of the real cost of capital and its two major components (real debt and equity costs plus depreciation and the effective tax rate) for nonresidential fixed investment in recent years.

Effective tax rates on the cost of capital investment in equipment and structures have been marked by strong, but divergent, trends between 1955 and 1980. As inflation and nominal interest rates rose, the economic value of depreciation fell, raising the effective tax rate on investment in structures from 36 to 58 percent. For equipment, however, the introduction of the investment tax credit in 1962 and subsequent changes in the tax law were enough to offset the effect of higher inflation, resulting in an actual decline in the effective tax rate from 24 to 13 percent. Although the disparity in the treatment of equipment and structures became quite large, by 1980 nonresidential fixed investment as a whole was not taxed any more heavily than in earlier years. The 27 percent average effective tax rate then was actually a little lower than in 1955.

Effective tax rates on both types of investment were reduced substantially by the 1981 Tax Act, with the average effective tax rate on all nonresidential fixed investment falling from 27 to 16 percent by 1984. Other things being equal, lower tax rates reduce the effective real cost of capital and raise the optimum capital/output ratio. Such an increase in the desired capital/output ratio would then raise the level of investment spending. During the current expansion, however, other things have not been equal. In particular, the real cost of debt and equity has been pulled up by the federal government's increased demand for credit (or, equivalently, the decrease in government saving) stemming from large and growing structural budget deficits.

Real debt and equity costs were abnormally high in 1980-82, as a temporary consequence of the process of disinflation brought about by a slowing in monetary growth. Ordinarily, real debt and equity costs would have fallen back to normal levels during the 1983-84 expansion. However, due to the growing pressure on interest rates created by federal budget deficits, by the first half of 1984, real debt and equity costs were still 2.5

Nonresidential Fixed Investment:
The Real Cost of Capital and Its Two Main Components
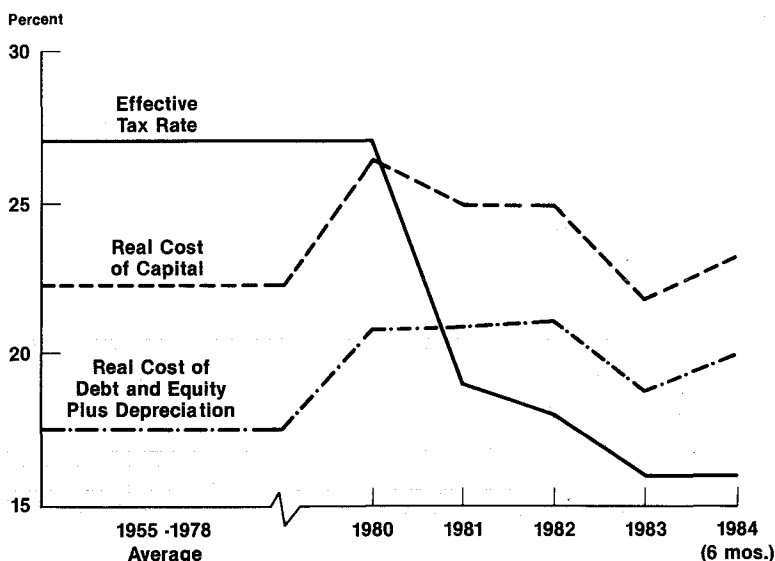
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percentage points above the average of earlier postwar years. This kept the real cost of capital investment in structures and equipment as measured by the Hall and Jorgenson formula at 23.2 percent, compared to an average of 22.2 percent in earlier years. This measure of the cost of capital was also higher over the first six quarters of the current expansion than in previous comparable periods—at 22.3 percent versus 20.8 percent.

Thus, the effect of the tax cuts in stimulating nonresidential fixed investment has been more than offset by the upward pressure on real debt and equity costs. Because of this, the current investment boom in plant and equipment cannot be explained by incentives provided in the 1981 Tax Act.

Importance of overall fiscal package
A major objective of the supply-side program was to provide tax incentives to stimulate business investment and economic growth. For such a program to work, real interest rates must not rise to such an extent that they nullify the effects of the tax incentives. Monetary policy cannot permanently alter real interest rates, so the problem lies with the overall fiscal package itself. The difficulty with

current fiscal policy is that the effects of tax cuts for households have overwhelmed the incentives provided to business. Personal income tax cuts have not produced the hoped-for increase in the private saving rate, but, instead, have only increased the federal government's demand for credit (or reduced government saving) as a result of the loss in government revenues. As a consequence, real debt and equity costs have risen by enough to offset the reduction in the cost of capital for investment in structures and equipment that would otherwise have occurred.

The evidence provides no support for the view that the current investment boom is a "supply-side miracle" produced by recent cuts in business taxes. The thrust of the overall fiscal package since 1980 has actually been counter-productive for that purpose, being "pro-consumption" rather than "pro-investment." The investment boom is better explained by other factors—particularly the availability of "high tech" investment and the obsolescence of a portion of the capital stock. Once the strength of these factors fades, as is likely, so too will the investment boom, unless the pro-consumption thrust of current fiscal policy is changed.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT
(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 10/17/84	Change from 10/10/84	Change from 12/28/83 Dollar	Percent Annualized
Loans, Leases and Investments[1] [2]	183,640	1	7,615	5.3
Loans and Leases[1] [6]	164,950	9	9,595	7.6
Commercial and Industrial	49,624	− 204	3,661	9.8
Real estate	61,083	117	2,184	4.5
Loans to Individuals	30,314	46	3,663	17.0
Leases	5,049	13	− 14	− 0.3
U.S. Treasury and Agency Securities[2]	11,614	− 16	− 893	− 8.8
Other Securities[2]	7,076	8	− 1,087	− 16.4
Total Deposits	190,240	−2,593	− 757	− 0.4
Demand Deposits	44,394	−2,214	− 4,843	− 12.1
Demand Deposits Adjusted[3]	29,689	−1,124	− 1,642	− 6.4
Other Transaction Balances[4]	12,312	− 239	− 463	− 4.4
Total Non-Transaction Balances[6]	133,534	− 140	4,549	4.3
Money Market Deposit Accounts—Total	38,034	99	− 1,563	− 4.8
Time Deposits in Amounts of $100,000 or more	41,260	− 111	3,095	10.0
Other Liabilities for Borrowed Money[5]	18,787	−1,044	− 4,220	− 22.7

Weekly Averages of Daily Figures	Period ended 10/8/84	Period ended 9/24/84	
Reserve Position, All Reporting Banks			
Excess Reserves (+)/Deficiency (−)	102	105	
Borrowings	67	47	
Net free reserves (+)/Net borrowed(−)	35	58	

[1] Includes loss reserves, unearned income, excludes interbank loans
[2] Excludes trading account securities
[3] Excludes U.S. government and depository institution deposits and cash items
[4] ATS, NOW, Super NOW and savings accounts with telephone transfers
[5] Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources
[6] Includes items not shown separately