

Federal Deficits and Private Credit Demands

Economic Impact Analysis

One of the few areas of agreement among public officials and economists alike is the belief that the United States is facing deficits of unprecedented size—in absolute terms and relative to the economy—over the next several years. There are, of course, some technical estimating differences among professionals, but these are minuscule compared with wide differences in the outlook for the deficit that existed a year ago. The important questions now are what are the chances that the projected deficits will be reduced and, if they are not cut, what are the implications of large deficits for monetary policy and ultimately for the economy in general.

The analysis that follows is in three parts. First, after a brief introductory discussion to put the magnitude of the future deficits into a historical and international perspective, the factors that have led to the dramatic shift in the outlook in the last few years are reviewed. Next, the question of whether it is likely that the economy can “grow out of the deficits” is explored. At the end of these two parts, it will be clear that the budget deficit is not likely to be reduced very easily or very rapidly. This conclusion is the motivating factor behind the final section which discusses the implications of large deficits for monetary policy and the economy.

The views expressed in this article are those of the author, James R. Capra, formerly Manager of the Domestic Research Department, and do not necessarily reflect those of the Federal Reserve Bank of New York. The author would like to thank William Cohen for his help on net interest estimates and Carl Palash for his work on estimates of saving.

Uncharted fiscal territory

As shown on Chart 1, the United States is moving into uncharted fiscal territory. The deficit will equal 6½ percent of gross national product in 1983, and by 1985—three years into a recovery—it could still be about 6 percent of GNP. Usually the deficit peaks shortly after the end of a recession and then drops by a significant amount. But that is not likely to be the case in 1983 through 1985, under reasonable assumptions about how the economy will perform.

While Chart 1 compares the projected deficits to previous experience, Table 1 puts them into an international perspective. As a percentage of GNP, projected general government deficits for the United States (the combined deficit or surplus of the Federal and state and local sectors) are well in excess of the 1970-80 average for Japan, Germany, the United Kingdom, and France. More important, the projections of the general government deficit as a percentage of net saving, 50 to 60 percent for the United States in 1984 and 1985, is about double the highest figure for Japan during the decade—31 percent in 1978—and is above the highest figure for any of the four countries, except the United Kingdom, during their 1975 recession.

What is driving the widening gap?

A few years ago, in the late 1970s, even the most pessimistic of fiscal policy economists were not projecting deficits of 6 percent of GNP, especially not well into a recovery. What happened? Some argue that the tax cut is responsible for the problem. Others

contend it is the defense buildup or uncontrolled non-defense spending. Still others say the recession put the economy on a growth path so far below potential that it will never fully recover. They argue that lower real output and incomes, combined with disinflation, have permanently eroded the revenue base, that is, nominal incomes. It is important to explore the question of what has caused the deficit to grow, if only to emphasize that the problem is one that is not likely to go away without some hard and difficult decisions being made.

As shown on Chart 2, by 1985, revenues are projected to be 18.7 percent of GNP and outlays 24.6 percent, for a deficit of 5.9 percent of GNP. Using 1980 as a reference point, a year when the deficit was 2.3 percent of GNP, revenues are projected to decline and outlays increase. The swing is 1.4 percentage points for revenues and 2.2 percentage points for outlays (Table 2). The defense increase (1.7 percentage points) and higher government interest payments (1.4 percentage points) more than account for the spending increases. Nondefense outlays are pro-

jected to decline as a percentage of GNP, although, as will be shown later, there are both ups and downs within this category.

Revenues

The 1.4 percentage point decline in Federal revenues as a percentage of GNP is made up of reductions of the corporate and individual income tax burden, offset partially by the rise in social security taxes enacted in the 1977 and 1983 Social Security Act Amendments (Table 3A). The second part of the table partitions the change in revenues, compared with 1980, into recession-related changes and legislative changes. The message of the table is that, although the recent recession is a factor in the decline in revenues as a percentage of GNP, it is far less important than the legislative changes—in particular the Economic Recovery Tax Act (ERTA).

A different way of looking at the revenue projection is to ask if the decline was deliberate. This can be done by comparing current projections of revenues

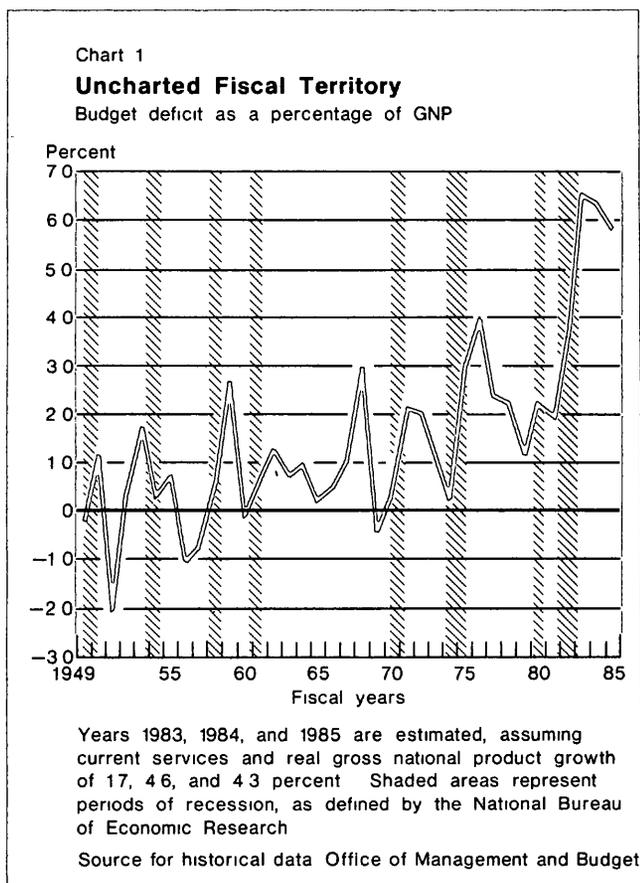


Table 1
General Government Deficits, 1970-80

Country	Average	Highest*
As a percentage of GDP or GNP		
Japan	-2.17	-5.5 (1979)
Germany	-1.85	-5.7 (1975)
United Kingdom	-2.37	-4.9 (1976)
France	-0.17	-2.2 (1975)
United States†	-0.88	-4.2 (1975)
Projection for the United States	1983 = -5.4	
	1984 = -4.7	
	1985 = -4.7	
As a percentage of net private savings		
Japan	-11.3‡	-31.0 (1978)
Germany	-19.6	-55.9 (1975)
United Kingdom	-30.2	-70.0 (1975)
France	-1.8	-20.2 (1975)
United States†	-14.8	-52.4 (1975)
Projection for the United States	1983 = -70.80	
	1984 = -50.60	
	1985 = -50.60	

* Figures in parenthesis indicate year of highest deficit for decade.

† Includes state and local governments.

‡ Average for 1975-80 was 24.8 percent.

Source: Organization for Economic Cooperation and Development (June 1983).

Table 2

How the Budget Changes after 1980

As a percentage of GNP

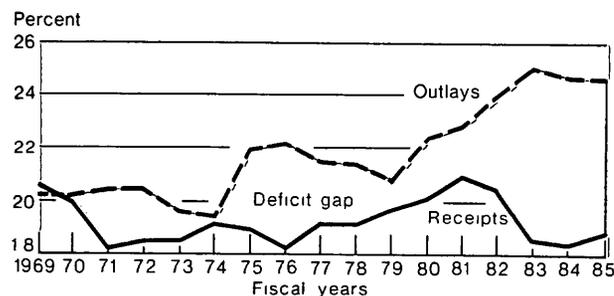
Budget items	1980	1985*	Change (percentage points)
Deficit	-2.3	-5.9	-3.6
Revenues	20.1	18.7	-1.4
Outlays	22.4	24.6	+2.2
Defense	4.8	6.5	+1.7
Interest	2.0	3.4	+1.4
Nondefense	15.6	14.7	-0.9

*Current policy (current services) estimates.

Chart 2

Growing Gap in Share of GNP

Federal receipts vs outlays



Projections for 1983, 1984, and 1985 are Federal Reserve Bank of New York estimates

Source for historical data Office of Management and Budget

Table 3

(A) Composition of Decline in Federal Revenues

As a percentage of GNP

Revenue source	1980	1985	Change
Individual income	9.5	8.4	-1.0
Corporate income	2.5	1.6	-0.9
Social insurance	6.1	6.9	+0.8
Other	2.0	1.7	-0.3
Total	20.1	18.7	-1.4

(B) Factors Contributing to Change in Federal Revenues

As a percentage of GNP, 1985 compared with 1980

Revenue source	Total change	Recession related	Social security tax increase	ERTA/TEFRA*	Wind-fall profit
Individual income	-1.0	-0.2†	—	-0.8	—
Corporate income	-0.9	-0.4‡	—	-0.5	—
Social insurance	+0.8	—	+0.8	—	—
Other	-0.3	-0.2§	—	-0.2	+0.1
Total change	-1.4	-0.8	+0.8	-1.6	+0.1

*Economic Recovery Tax Act and Tax Equity and Fiscal Responsibility Act

†The 1980 unemployment rate was 7.3 percent and real GNP was 4.0 percent below potential. For 1985, the unemployment rate is assumed to average 8.9 percent and real GNP is projected to be 8.0 percent below potential. If the gap had remained the same, individual income taxes as a share of GNP would have risen because of the progressive tax structure.

‡Profits before taxes (pre-accelerated cost recovery basis) as a share of GNP are projected to be 7.8 percent in 1985, compared with 9.5 percent in 1980. If the profits share had remained at 9.5 percent, corporate taxes as a percentage of GNP would have been larger.

§This change reflects the effect of lower interest rates (assumed to be related to the 1982 recession) on Federal Reserve earnings and the effect of lower oil prices on windfall profit taxes.

Table 4

How Individual-Corporate Income Taxes for 1985 Compare with What was Anticipated When ERTA was Passed?

As a percentage of GNP

Changes	Individual	Corporate
ERTA estimate	8.3	1.7
Changes		
Economic changes	-0.6*	-0.6†
‡Revenue loss (revised estimate)	+0.4	—
TEFRA	+0.3	+0.5
Subtotal	+0.1	-0.1
Current estimate	8.4	1.6

* -0.2 because of lower real GNP, -0.4 because of lower inflation

† The corporate profits share of GNP (pre-accelerated cost recovery basis) was assumed to be 9.0 percent at the time ERTA was passed, compared with a current estimate of 7.8 percent

‡ The Treasury and Joint Committee on Taxation revised their estimates of the revenue effects of the tax cuts subsequent to enactment

Table 5

Where in the Budget will the GNP Share Decline?

Outlays as a percentage of GNP

Budget items	1980 Actual	1985 Baseline projection	1980-85 change
National defense	4.8	6.5*	+1.7
Benefit payments [†]			
Means tested	2.2	2.1	-0.1
‡Nonmeans tested ..	8.8	9.6	+0.8
Grants to state and local governments [‡]	2.3	1.5	-0.8
Other Federal operations and subsidies	2.3	1.5	-0.8
Net interest	2.0	3.4	+1.4
Total	22.4	24.6	+2.2

* Assumes 5 percent real growth in 1984-85 budget authority and pay raises of 4 percent in January of each year.

† Such as social security and medicare benefit payments.

‡ Excludes grants for benefit payments for individuals.

with what public officials were told was going to happen to 1985 individual and corporate income tax revenues when ERTA was passed. Recently, some have argued that the deficit increase is larger than anticipated two years ago because inflation is now forecast to be so much lower than projected then, in the summer of 1981, and because the real economy in 1985 is expected to be a lot farther below potential than anticipated in the Administration's economic scenario that was used at the time.¹

Those who take this position tend to overestimate the effect of the change in economic assumptions on revenues as a share of GNP. Changing economic assumptions can drastically affect estimates of revenues in billions of dollars, but the effect on the share of GNP is much smaller in a proportional sense. A weaker economy and lower inflation mean that both GNP and revenues are lower. Whatever effect there is on the revenue share of GNP is primarily the result of the progressive or graduated character of individual income tax rates. This causes individual income tax revenues to fall by a somewhat greater percentage than the fall in income. But the effect on the total

revenue share of GNP is not very large, in part because individual taxes will represent less than 50 percent of total revenues by 1985 and in part because starting in 1985 the effect of inflation on the revenue share of GNP is muted by the start of tax indexing. Also ignored by those who suggest that revenues will fall by more than anticipated is the fact that the Tax Equity and Fiscal Responsibility Act (TEFRA) effectively took back some of the ERTA tax cuts, a political development not anticipated in 1981. When the effects of the economic and legislative changes since the summer of 1981 are tabulated, as in Table 4, the results for individual and corporate income taxes are that the estimated share of GNP in 1985 is virtually unchanged from what was intended when ERTA was passed. Individual income taxes for 1985, as a percentage of GNP, are up $\frac{1}{10}$ percentage point (8.4 percent compared with 8.3 percent) from what was planned and corporate income taxes are down $\frac{1}{10}$ (1.6 percent compared with 1.7 percent).

The conclusion to be drawn from this discussion of the revenue side of the growing deficit is that the decline in revenues as a percentage of GNP is primarily because of the 1981 tax cuts. The recession is a much less important factor. And the projected decline, especially in individual and corporate income taxes, is about what was intended.

¹ See the House Budget Committee Recommendations for the First Concurrent Resolution (March 1983), page 72, for a discussion of the disinflation point

Outlays

It is clear that in an arithmetic sense defense and government interest payments more than account for the projected increase in outlays from 22.4 percent of GNP in 1980 to 24.6 percent by 1985. Nondefense spending as a percentage of GNP is projected to decline. But this calculation masks the fact, shown in Table 5, that the GNP share for nonmeans-tested benefit payments such as social security and medicare increases significantly. At the same time, grants to state and local governments and other Federal operations (primarily Federal civilian agency pay) decline.

The size of the defense buildup is a familiar topic. A relevant point that has not been made, though, is that much of this buildup is already locked in. Thus, although the estimates in Table 5 assume that real growth of budget authority will be held to 5 percent in 1984 and 1985, defense outlays as a percentage of GNP will still rise significantly by 1985. Defense expenditures will rise even more if the cuts assumed in the First Concurrent Resolution are not implemented and budget authority growth in real terms is not held to 5 percent. For example, if authority increases by as much as suggested by the President, projected outlays in 1985 as a percentage of GNP would be 0.4 to 0.5 percentage points higher than shown in Table 5.

Nonmeans-tested benefit payments are dominated by social security cash payments—Old Age, Survivors, and Disability Insurance—and medicare, which make up almost three fourths of the category (Table 6). The problem of future growth of entitlement and benefit payments really boils down to these two programs. They account for more than all the 1980-85 growth. The other programs decline slightly, on balance, as a percentage of GNP. An important point to note is that medicare, as a percentage of GNP, is projected to grow faster than social security cash payments. Its share of GNP is projected to rise from 1.2 percent in 1980 to 2.0 percent in 1985. The figures in Table 6 imply that, if spending for nonmeans-tested programs is to be brought under control, social security cash payments (which were just recently addressed in the Social Security Amendments of 1983) and medicare would probably have to absorb a significant part of the cutback.

How do the projections for 1985 compare with the Administration's original budget plans of March 1981? In March 1981, the Administration was seeking to reduce outlays to 19.2 percent of GNP by 1985. The baseline projection is now 24.6 percent (a difference of 5.4 percentage points). The largest increases in the projection since 1981 are due to rises in nonmeans-tested benefit payments, rises in net interest, and the failure to achieve an undistributed cut of over \$40 billion (equivalent to 1 percent of GNP) that the Ad-

ministration never ultimately proposed but which was included in the March 1981 budget totals.

One reason why the projection has changed is that, on balance, the budget cuts were smaller than the President included in his plan—by 0.5 percentage points as a percentage of GNP or 1.5 percentage points if the Congressional reductions to the President's defense plan are not included. Most of the change was the \$40 billion undistributed cut. Excluding that cut, the Congress actually passed nondefense budget reductions about equal to what was proposed in March 1981 although the distribution of the cuts was somewhat different (Table 7). If defense is included, the cuts exceeded the President's proposal.

Automatic stabilizers, that is, higher than anticipated unemployment benefits resulting from a higher than projected unemployment rate, and higher interest payments, resulting from higher rates and greater than anticipated debt outstanding, are responsible for 1.9 of the 5.4 percentage point change in the projection of 1985 outlays as a percentage of GNP. But the largest element in the change is the fact that there is not necessarily a full and automatic response of outlays to a lower than anticipated nominal GNP. Lower inflation results in lower outlays for some, but not all, programs. But even this occurs with an appreciable lag. Lower real economic growth has no effect on outlays aside from the automatic stabilizers just mentioned. Thus, when nominal GNP falls, the denominator of the spending-GNP ratio falls much more rapidly than the numerator.

Table 6

What is the Composition of 1980-85 Growth of Nonmeans-Tested Benefit Payments?

As a percentage of GNP

Benefit payments	1980	1985 baseline projection	Change
Social security			
*Cash payments	4.6	5.1	+0.5
Medicare	1.2	2.0	+0.8
Civil service/military retirement	1.0	1.1	+0.1
Unemployment compensation	0.7	0.6	-0.1
Veterans benefits	0.8	0.5	-0.3
Other	0.5	0.3	-0.2
Total	8.8	9.6	+0.8

*Old-Age, Survivors, and Disability Insurance

The last column in the table is an attempt to account for the unresponsiveness of outlays to lower nominal GNP. It shows that, even if all the President's proposals had been enacted intact, lower nominal GNP, unaccompanied by lower nominal outlays, would have raised the GNP share for outlays by 3.0 percentage points. To keep the outlay target at 19.2 percent of GNP, the President would have had to propose successively deeper cuts in nominal outlays as the projections for real growth and inflation were lowered.

For outlays, then, the projected growth as a percentage of GNP since 1980 is comprised of defense, net interest, and nonmeans-tested benefit payments.

Grants and other operations have been reduced significantly, while the GNP share for means-tested benefits is projected to be virtually unchanged. The projection for outlays as a share of GNP in 1985 has increased significantly since the President submitted his March 1981 plan. This is primarily because proposals were not made nor was Congressional action initiated that would lower nominal outlays by an amount proportional to the loss in projected GNP. In an indirect sense, recession and disinflation had more of an effect on the President's 1981 plan to cut the outlay share of GNP than it did on his path for revenues.

Table 7

What Happened to the Administration's Original Spending Plan for 1985?

Outlays in 1985 as a percentage of GNP

Budget items	March 1981 estimate	1985 baseline projection	Change
National defense	6.5	6.5	—
Benefit payments:			
Nonmeans tested	8.3	9.6	+1.3
Means tested	1.7	2.1	+0.4
Grants	1.0	1.5	+0.5
Other operations and subsidies	1.2	1.5	+0.3
Net interest	1.5	3.4	+1.9
Undistributed cut	-1.0	—	+1.0
Total	19.2	24.6	+5.4

Reasons for Change from 1981 Plan

Outlays in 1985 as a percentage of GNP

Budget items	Total change	Congressional action/inaction	Automatic stabilizers*	Interest payments: more debt	higher rates	Lower GNP inflexible outlays†
National defense	—	-1.0	—	—	—	+1.0
Benefit payments:						
Nonmeans tested	+1.3	-0.2	+0.2	—	—	+1.3
Means tested	+0.4	+0.1	—	—	—	+0.3
Grants	+0.5	+0.3	—	—	—	+0.2
Other operations and subsidies	+0.3	+0.1	—	—	—	+0.2
Net interest	+1.9	—	—	+1.3	+0.4	+0.2
Undistributed cut	+1.0	+1.2	—	—	—	-0.2
Total	+5.4	+0.5	+0.2	+1.3	+0.4	+3.0

*Higher than anticipated unemployment benefits resulting from a higher than projected unemployment rate

†Measures effect of lower GNP on outlays as a percentage of GNP if 1985 outlays, in nominal terms, were to equal the March 1981 target

Will the economy grow out of the projected deficits

Recently, the suggestion has been made that the economy will grow out of the projected deficits. The reasoning is that higher incomes, resulting from more economic growth, will boost tax revenues sufficiently to wipe out a significant part of the deficits. To examine this proposition more carefully, three alternatives were chosen to the basic economic scenario used for the calculations in the previous section. Also, the projections were extended through 1988.

Real GNP

Most forecasters have recently revised their projections for 1984 in response to a faster than expected expansion in production and employment in the second quarter of 1983. But the important question for the long-run prospects for the deficit is what growth to project for the extended period 1984-88.

The baseline economic scenario used here assumes real GNP growth (year-over-year basis) of 4.6 percent in fiscal 1984, 4.3 percent in 1985, and 3.8 percent in each year 1986-88. Over the five-year period, 1984-88, cumulative real GNP growth under these assumptions would be 22.0 percent.

In the postwar era, there have in fact been selected five-year periods over which more growth was achieved. For example, in the five-year period ended with 1966, real GNP grew by 30.2 percent. In the five-year period just after the war, ended with 1952, real GNP grew by 27.7 percent. The momentum of growth during these periods, together with the simple arithmetic of including at least two of the years from these peak growth spurts in the calculation of moving averages for five-year periods, meant that the periods ended in 1963, 1965, 1967, 1968, 1969, and 1953, 1954, and 1955 also showed growth above the 22 percent assumed in the baseline economic assumptions (Table 8). But, if the years affected by the two postwar growth spurts are disregarded, the next highest five-year period is the one ended in 1980—the recovery from the 1974 recession. Five-year growth was only 19.7 percent, lower than assumed for 1984-88. In fact, there was not one five-year period ended in the 1970s when cumulative growth was as high as 20 percent.

In economics, historical precedent is not proof. Yet it does temper our judgment of what is likely. Clearly, a growth spurt comparable to 1962-66 is possible, but it does not appear likely. The Administration, in its January budget document, lists several reasons why such rapid growth probably will not occur. For one thing they suggest that since capacity utilization is now much lower than it was at the start of the earlier period, a comparable surge in fixed investment will probably not happen—especially at current levels

Table 8

Cumulative Real GNP Growth over Five-Year Periods

Year designates final year of period; in percent

Year	Cumulative five-year growth
1952	27.7
1953	27.3
1954	25.2
1955	22.9
1956	15.9
1957	13.8
1958	9.2
1959	17.2
1960	12.1
1961	12.7
1962	17.0
1963	22.3
1964	21.4
1965	26.1
1966	30.2
1967	26.4
1968	27.1
1969	24.1
1970	16.8
1971	14.0
1972	17.3
1973	18.5
1974	14.6
1975	13.5
1976	15.7
1977	15.5
1978	14.7
1979	18.7
1980	19.7
1981	15.7
1982	7.8

of real interest rates. They also mention that financial difficulties faced by many lesser developed countries will be a drag on future U.S. exports.

More fundamentally, over extended periods of time it is best to think about the growth of real GNP as the sum of the growth of employment and labor productivity. In the five-year period ended with 1966, real GNP growth averaged 5.4 percent per year. Civilian employment grew by 2.0 percent per year (2.6 percent in the nonagricultural sector) and productivity by 3.3 percent. In the five-year period ending in 1988, real GNP—according to the baseline economic assumptions—would grow by about 4.1 percent per year, with civilian employment growing by 2.5 percent annually and productivity by 1.7 percent. (Average weekly hours are assumed to continue their long-run secular decline, falling 0.2 percentage points.)

The big difference between economic performance in the early sixties and the projection for the mid-

Table 9

Alternative Economic Assumptions

Fiscal year over fiscal year growth rates, in percent

Fiscal year	(Baseline)		Path A (1962-66)*		Path B (1948-52)*		Path C (1976-80)*	
	Real GNP	GNP deflator	Real GNP	GNP deflator	Real GNP	GNP deflator	Real GNP	GNP deflator
1984	4.6	4.0	6.0	5.5	6.0	5.5	4.5	3.9
1985	4.3	4.0	6.0	6.5	5.7	6.5	3.4	3.9
1986	3.8	4.0	5.5	7.5	5.0	7.0	3.4	3.8
1987	3.8	4.0	5.0	7.5	4.5	7.0	3.4	3.8
1988	3.8	4.0	4.6	7.5	3.9	7.0	3.4	3.7

*Real GNP growth was made, on average, the same as in the period identified. Inflation that is consistent with that growth was then estimated. Inflation was not made the same as in the period identified, since labor force, productivity, and energy price outlooks are now much different.

eighties is productivity. As low as the projection for productivity is, it still is significantly better than the performance of the past five years. In 1982, the *level* of output per man-hour in the nonfarm business sector averaged exactly what it did in 1977—no growth in five years. While it is unlikely that the experience of the last five years will be repeated, neither is it probable that an explosion in productivity will occur and then be sustained for five years. The factors contributing to the slowdown in productivity growth are not likely to change dramatically overnight.² It is true that in the first quarter of 1983, productivity did grow at a 4.8 percent annual rate. But a one- or two-quarter jump in productivity at the start of a recovery, before workers are rehired, is normal. In fact, 4.8 percent is well below the average of 7.9 percent for the first quarter of postwar recoveries. Thus, it does not appear reasonable to use the first-quarter numbers to argue that the long-range productivity assumptions are too low.

The growth of 2.5 percent annually in employment under the baseline economic assumptions would be sufficient to reduce the unemployment rate to 6 percent by the end of the period, assuming labor force growth of about 1.7 percent per year. In the 1962-66 period, the labor force grew by 1.5 percent per year, while employment was growing by 2.0 percent. Thus employment growth in the 1984-88 period under the baseline

assumptions is assumed to be even faster, relative to labor force growth, than in 1962-66.

A repeat of the 1962-66 growth spurt, while technically possible, is not likely, although estimates of the effects of such a recovery on the deficit will be presented. But, first, it is necessary to state the inflation rates that are assumed to go with alternative rates of real GNP growth.

Inflation

The baseline economic assumptions project inflation, as measured by the GNP deflator, to average about 4 percent annually. The projections assume an absence of food or oil price shocks—about the only assumption that can be made—but it is clear that these could change the outlook considerably. From a more fundamental economic standpoint, the character of the recovery that is projected implies that not until 1988 would the economy approach "potential"—the level of GNP above which most economists believe that inflation will accelerate. Thus, under the baseline real GNP forecast, inflation would remain moderate throughout the period.³

If the economy were to grow at the 1962-66 pace, accelerating inflation would probably reassert itself more quickly. By 1986, real GNP would be in excess

²J. R. Norsworthy, Michael J. Harper, and Kent Kunze, "The Slowdown in Productivity Growth, Analysis of Some Contributing Factors" in *Brookings Papers on Economic Activity* (1979 2), Edward F. Denison, *Accounting for Slower Economic Growth* (Brookings Institution, 1979); Edward A. Hudson and Dale W. Jorgenson, "Energy Prices and the U.S. Economy, 1972-1976", *DRI Review* (September 1978)

³For this analysis, potential GNP is defined as the level of real GNP when the unemployment rate is 6 percent. The question of whether inflation is likely to accelerate under a growth path similar to the baseline scenario used here is explored in some detail in the article by Steven Englander and Cornelis Los elsewhere in this *Quarterly Review*. Their conclusion is that an acceleration is not likely until the unemployment rate falls below 6 percent unless exogenous food or energy price shocks occur.

of potential GNP. The resulting faster inflation would improve the deficit outlook. Revenues, which tend to respond fully and immediately to higher inflation, would increase by more than outlays, which respond only partially to more inflation and with a lag. An acceleration of inflation would reduce the likelihood of sustaining rapid real growth, so that in a sense a high growth-high inflation scenario might not be feasible. Nevertheless, for illustrative purposes, the next section includes estimates of current services deficits under two such economic scenarios. Also included are estimates of current services deficits if the economy were to recover at the 1976-80 pace, with real growth averaging 3.6 percent annually over the next five years.

Budget deficits under alternative economic paths

Three alternatives to the baseline economic scenario were selected for use in calculating projected budget deficits. The three paths—A, B, and C—correspond to average annual growth of 5.4 percent, equivalent to the experience of 1962-66, 5.0 percent (1948-52), and 3.6 percent (1976-80). In all the paths, growth is assumed to be more rapid at first and to decline gradually. For example, under path A, real GNP growth is 6.0 percent in both fiscal years 1984 and 1985 (Table 9).

For inflation, a gradually widening discrepancy between the inflation rate in the baseline projection and the alternative paths is assumed. The process might not be that gradual if inflation expectations were to anticipate rapidly accelerating price increases.

Interest rates tend to be sensitive to the current and anticipated inflation rate. For the calculations of interest on the public debt, it was assumed that the gap between the inflation rates in the baseline and the rates in the alternative paths would be fully transmitted to interest rates. Thus, the rates on new Treasury financing would be 3.5 percentage points higher in 1988 under path A than under the baseline.

The baseline deficit projection grows from about \$220 billion in fiscal year 1984 to \$300 billion by 1988 (Table 10). There is no question that more rapid GNP growth, like the record growth in 1962-66, would alter the outlook. But the improvement is not so great or so rapid as might be expected. Specifically, under path A, the current services deficit would decline to about \$180 billion by 1985 and to \$150 billion by 1988. The estimates contain four separate effects of the economy on the budget:

- Higher revenues because of higher real GNP and higher prices (\$215 billion in 1988)
- Lower outlays for unemployment compensation, food stamps, and welfare (\$10 billion in 1988).

Table 10

Alternative Deficit Projections

By fiscal year, in billions of dollars

Fiscal year	Baseline	Under path A (1962-66) growth rate	Under path B (1948-52) growth rate	Under path C (1976-80) growth rate
1984	—222	—200	—200	—222
1985	—225	—180	—180	—235
1986	—243	—165	—175	—260
1987	—276	—165	—175	—300
1988	—300	—150	—185	—330

- Higher outlays for indexed entitlements because of higher inflation (\$60 billion in 1988).
- Lower interest outlays because of lower debt outstanding as a result of deficits being smaller than in the baseline (\$45 billion in 1988).
- Higher interest outlays because of higher interest rates on Treasury debt as a result of higher inflation (\$60 billion in 1988)⁴

It is important to note that, if by some chance the rate of inflation were not to accelerate even though real GNP were growing at a record pace, the deficits would be *larger* than under path A. There would be no effect on indexed entitlements or on the interest rates for Treasury debt, but revenues would not grow as much because nominal income would be lower than under path A. The 1988 deficit would be about \$185 billion under this hypothetical rapid growth-low inflation scenario, compared with \$150 billion under path A.

Under path B, the 1948-52 growth scenario, the deficit would hover around \$180 billion throughout the period. Finally, under path C, a recovery similar to that of the 1976-80 period, the deficit would be even larger than in the baseline—about \$330 billion in 1988. The year-by-year estimates for all three paths are summarized in Table 10.

As a percentage of GNP, deficits under the three paths contrast more sharply with the baseline figures. For example, the 1988 deficit of \$300 billion for the baseline would be 6.3 percent of GNP. The \$150 billion deficit under the record growth of path A would be 2.6

⁴ This includes about \$50 billion from higher rates and \$10 billion because financing the higher rates caused more debt to be created.

percent of GNP—substantially more modest, but still well above the postwar average of 0.9 percent and the average of 1.6 percent between 1965 and 1980. (If faster real growth were for some reason not accompanied by more rapid inflation, the deficit would be 3.2 percent of GNP in 1988.) Under path B, the 1988 deficit would be 3.1 percent of GNP. The path C deficit, which reflects slower economic growth and lower inflation, would be 7.1 percent of GNP in 1988.

Overall, analysis of budget trends reveals that explicit policy actions like the tax cut, institutional constraints like the failure of nominal outlays automatically to respond very much or very quickly to disinflation, and public support for social security, medicare, and a stronger defense appear to imply that large deficits could be a part of the economic landscape for the foreseeable future. More rapid GNP growth could improve the outlook somewhat, but even with record growth over the 1984-88 period the deficit would still be about \$150 billion by 1988 and the GNP share would be large by historical standards. If substantial deficits are likely under almost all circumstances, barring a major switch in public policy, what are the implications for monetary policy and the economy?

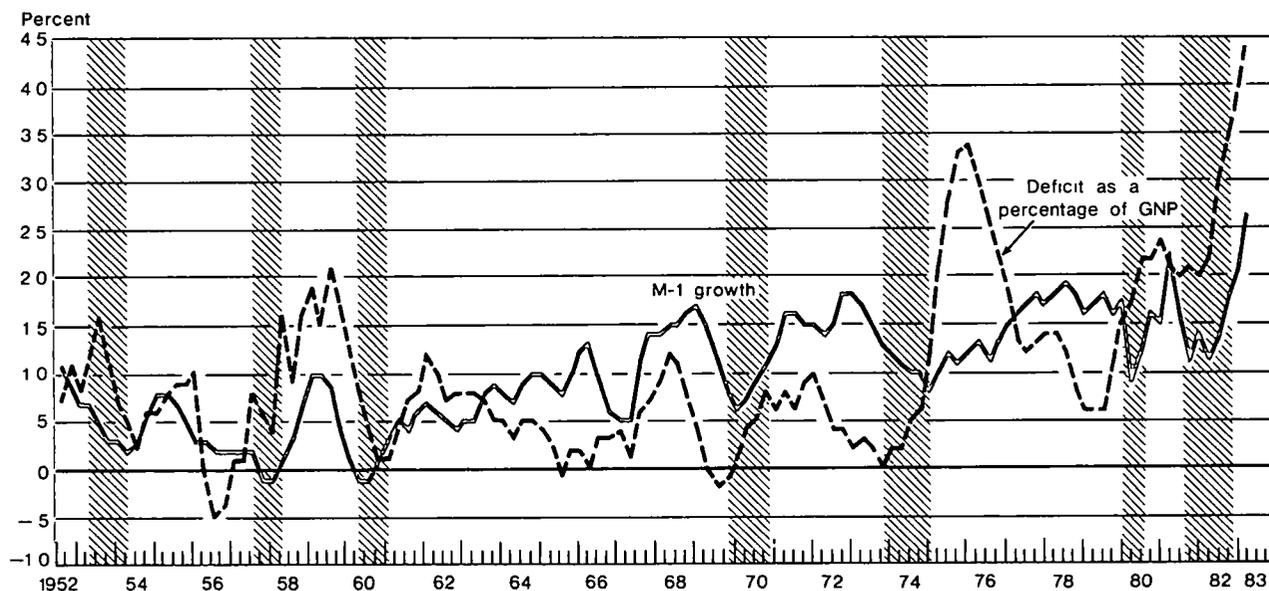
Implications for monetary policy

On the surface, it is not entirely clear what the large deficit projections for the future mean for monetary policy. In the United States, there is no precedent for deficits that do not drop significantly (at least as a percentage of GNP) within six to twelve months after the end of a recession. In addition, even if the current deficit outlook were not unique, the historical relationship between deficits and monetary policy—at least as measured by M-1 growth—is ambiguous. The econometric results on this subject are as contradictory as any in the literature with the possible exception of the work on the relationship between social security and saving behavior. Chart 3 exemplifies this. Between the mid-1950s and 1974, money growth and deficits appear to track quite well, but between 1974 and 1980 there appears to be little relationship—possibly because the Federal Reserve was paying more attention to targeting the money stock or possibly because financial innovation was distorting the meaning of M-1 growth rates.

Money is not the only important economic variable that does not show a strong historical correspondence or correlation with deficits. The Secretary of the Treasury recently reiterated what many academicians re-

Chart 3

The Deficit as a Percentage of GNP and M-1 Growth *



* Shaded areas represent periods of recession, as defined by the National Bureau of Economic Research
Series are normalized by dividing by the mean of each series

ported throughout the 1970s—namely, that deficits have historically not been high at the same time interest rates and inflation rates were high. But this lack of historical or statistical correspondence by no means proves there is no relationship between deficits and these other variables. It may mean that the deficits were not big enough to make a difference, or that other policies or economic events were working to offset the effects. To evaluate the potential effects of the large projected deficits on the economy, simple correlation analysis is insufficient. Some model or view of how the economy works is an essential first step. Next is a forecast of the outlook for the economy, together with some assumption about how public policy (especially monetary policy) will respond or choose not to respond to the deficits.

The near term

Ironically, one of the factors contributing to what many thought would be the slow pace of the current recovery is the relative weakness of the fiscal stimulus. This does not mean that the level of deficit is small. The important thing to focus on, from the standpoint of fiscal stimulus, is the change or swing in the deficit. As shown in Table 11, the increment to the deficit in 1983 (as a percentage of GNP) is less than one half of that in the first year of the 1975-76 recovery.⁵

A useful way of summarizing fiscal-monetary policy interactions is the graphical framework of IS-LM curves. The position of the IS curve, which is the locus of combinations of interest rates and output that correspond to equilibrium in the markets for goods and services (output market), is determined by, among other things, government expenditures and taxes. The position of the LM curve, which is the locus of interest rate-output combinations consistent with equilibrium in the money market, is determined by, among other things, monetary policy.

With the fiscal policy-induced shift in the IS curve in late 1982 and 1983 being relatively small, because the fiscal year 1983 deficit as a percentage of GNP grew by only 1.7 percentage points, the movement in the IS curve was rather modest—as shown in the first drawing in Chart 4. Thus, the only other short-run change that would induce an increase in output was an LM curve shift.⁶ Between late summer and mid-December 1982, reserve pressures were eased

⁵ This is not to say that over a more extended period the budget will not be more stimulative than in the past. It will be, as exemplified by the second recovery year comparison in Table 11.

⁶ The LM curve on Chart 4 is drawn as a nearly horizontal line. This would appear to be appropriate for short periods of time. Over the long term, the curve is more nearly vertical.

Table 11

Fiscal Policy Comparison, 1974-76 vs. 1982-84*

As a percentage of GNP

Budget item	1974	1975	1976	1982	1983	1984
Revenues	20.4	18.8	19.5	20.1	18.5	18.3
Expenditures	21.2	23.4	22.6	24.9	25.0	24.7
Deficit	-0.8	-4.6	-3.2	-4.8	-6.5	-6.4

Change in deficit as a percentage of GNP

First recovery year

1974-75 Increase of 3.8 percentage points

1982-83 Increase of 1.7 percentage points

Second recovery year

1975-76 Decrease of 1.4 percentage points

1983-84 Decrease of 0.1 percentage points

* Estimates are for year before the start of recovery, first recovery year, and second recovery year. Thus, the figures for 1974 represent deficits and GNP for 1974-II through 1975-I. Figures for 1982 represent 1982-I through 1982-IV.

and the discount rate was cut seven separate times, falling from 12 percent in early July to 8.5 percent on December 15. Short-term rates fell and long-term rates followed them. Yields on thirty-year Treasury bonds fell from 13.92 in late June to 10.54 in December. The LM curve shifted down, as graphically shown in the second drawing in Chart 4.

Up to this point in the analysis, deficits would appear to be relatively unimportant to the recovery. In fact, it could be argued that cutting the 1983 or 1984 deficit might reduce demand (shift the IS curve down) and, without an offsetting monetary policy change (LM curve shift), such a move toward fiscal restraint would slow the recovery.

However, there is at least one way in which deficits may in fact endanger the recovery by maintaining high nominal and real intermediate- and long-term interest rates even in the face of a monetary policy designed to facilitate recovery through moderate levels of short-term rates. For many purposes the interest rates of fundamental importance to spending decisions are intermediate- and long-term rates. Open market operations and discount rate cuts, however, directly affect only short-term rates. There is no guarantee that long-term rates will follow. They usually do, but not always. In December, for example, after the most recent discount rate cut, long-term rates did not follow and, in fact, backed up a bit. There are numerous explanations for this. A commonly held view is that the market had already anticipated the discount rate cut and

Chart 4

Near-term IS-LM Equilibrium

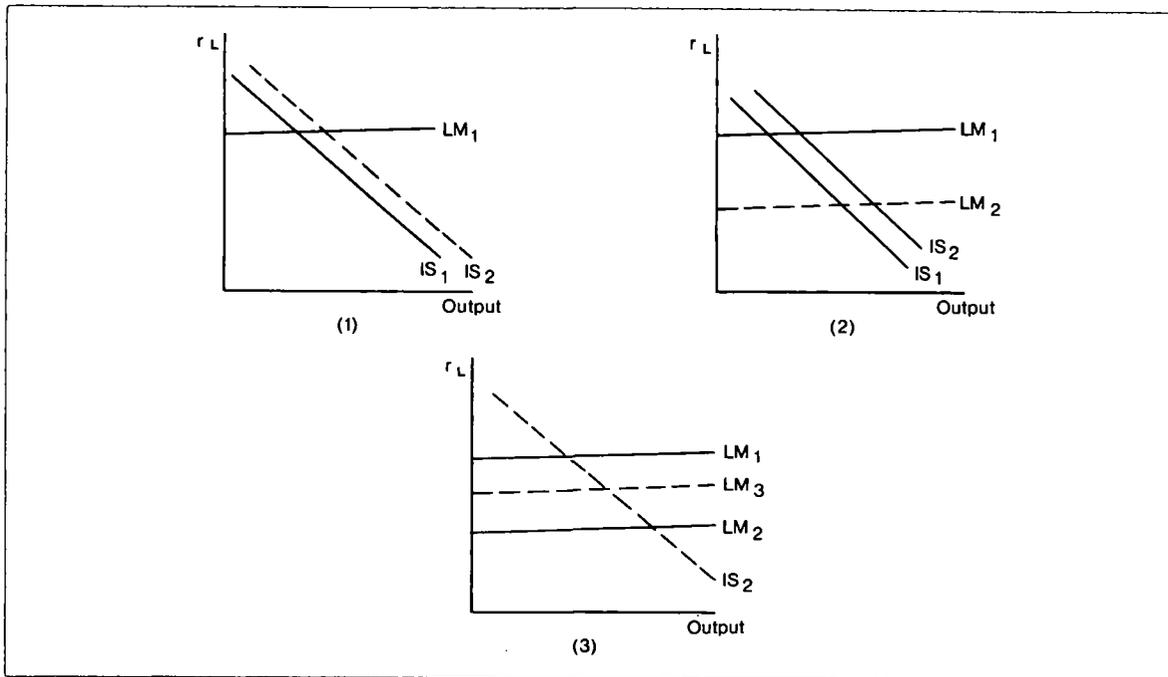
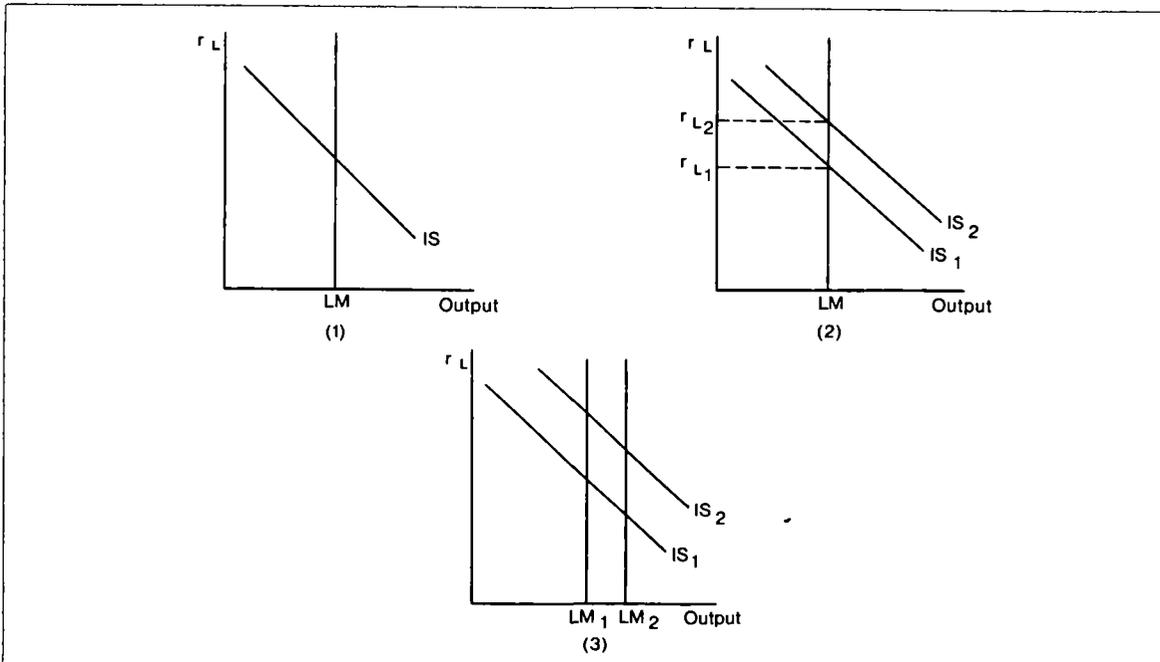


Chart 5

Long-term IS-LM Equilibrium



did not expect any additional ones for a while, and so the cut was already built into rates. But, looking beyond this reasoning, some explanation is required for the expectation that additional discount rate cuts were not forthcoming. One hypothesis is that money growth was expected to accelerate. Another hypothesis is that the market or the Federal Reserve or both may have believed that for a time a limit had been reached as to what monetary policy could do to stimulate the economy. A reasonable case could have been made that further monetary accommodation, while further lowering short-term rates for a time, at best would have had no effect on long-term rates and at worst could have caused them to increase, shifting the LM curve up, as shown in the third drawing on Chart 4.

Deficits are one of the reasons, although not necessarily the only reason, for what may be constraints on the ability of monetary policy to reduce intermediate- and long-term rates. The explanations given for continued high real and nominal intermediate- and long-term rates include the following:

- Projections of *future* deficits are holding up *real* rates as investors believe that ultimately, after recovery is under way, fiscal and monetary policies will clash.
- Future deficits undermine the market's confidence in monetary policy's ability to remain on its anti-inflationary course over the long run. Thus, they affect the inflation premium, based on *expected* inflation, that is built into long-term rates.
- Finally, the uncertainty premium in rates is probably increased because of expected high deficits, since the high level of rates—adjusted for current inflation—increases the risk of financial failure.

In short, what is argued is that from the standpoint of long-term investors large deficits in the midst of a prolonged economic recovery mean one of two things. Either a noninflationary monetary policy will lead to a confrontation between public and private credit demands that will drive up real interest rates or the Federal Reserve will ultimately accommodate, inflate the money stock, and the economy along with it. Thus nominal rates will rise.

Are there any facts to back up these hypotheses or does the unprecedented size of projected deficits mean we cannot use past experience and conventional analysis at all? In the first three years of recovery from the 1974-75 recession, the recession most like our recent

one in depth and duration, public borrowing (that is, Federal and state and local government borrowing) was 46.2 percent (1975), 30.8 percent (1976), and 21.6 percent (1977) of the net funds raised in the credit and equity markets by domestic nonfinancial sectors and by foreigners who borrowed and issued equity in the United States. The private percentage was the mirror image of these figures—53.8 percent, 69.2 percent, and 78.4 percent. One signal of possible future credit market pressures induced by a clash between monetary policy and deficits would be if government borrowing, as a percentage of total credit, were not to decline during recovery as in the past. For example, Federal Reserve policies could restrict the growth of total credit. And, since the Federal Government will never be crowded out of the market, the private sector would have to adjust. The market mechanism for this would be higher interest rates.

In early 1983, when the Federal Reserve set its target range for growth of the monetary aggregates, it also estimated an associated range for the growth of the level of domestic nonfinancial credit. A range of 8½ percent to 11½ percent growth for 1983 was estimated to be consistent with the targets for monetary growth. Even though the M-1 target was recently revised, the associated range for domestic nonfinancial credit was left unchanged. In addition, Chairman Volcker suggested that the range would in all likelihood be lowered by ½ percentage point, to an 8 to 11 percent band, for 1984. Under a noninflationary monetary policy and in the absence of major future institutional shifts in the financial sector, it is reasonable to extrapolate the 8 to 11 percent band into 1985. (Some might even argue that the band should be lowered.) The elements of funds raised in the financial markets that are not part of this credit aggregate—corporate equity issues and foreign debt and equity issues—have been included in a projection of total funds raised in 1983-85 (Table 12). (The funds raised through these vehicles are projected to grow by a significant amount in 1983, reflecting the surge in stock issues in early 1983, and then to decline somewhat in 1984 and 1985.)

The view of many in the credit markets that problems lie ahead if the deficits turn out as projected appears to be justified (Table 12). Funds available for the private sector—business, households, and foreigners—would be only about 40 percent or less of the total in each year, 1983-85, if total funds raised were held to the low end of the range. This would imply credit market pressures in each year, since private credit and equity comprised much higher fractions of the total—53.8 percent, 69.2 percent, 78.4 percent—in the 1975-77 recovery years. Even under the more expansionary policy, where domestic nonfinancial credit was to grow

at 11½ percent in 1983 and 11 percent in both 1984 and 1985, funds available for the private sector would be about 55 percent of total funds raised in the credit and equity markets in 1983-85. In this case, the restrictions on credit growth implied by the monetary targets would not appear to be a problem in 1983—which probably has been the case so far this year—but would become an increasingly serious problem in 1984 and 1985.

The estimates in Table 12 should not be viewed as a flow-of-funds forecast but simply a first-order calculation to determine whether on the surface the large future deficits appear consistent with growth of private credit that might be expected in a recovery. If this initial calculation were closer to prior experience, that is, if

the government share were calculated to be 20 to 30 percent of the total, for example, instead of 40 to 60 percent, it might be argued that second-order effects would make it possible for the government deficit to be financed with only minor repercussions for interest rates.

One of these second-order effects is net foreign investment. Clearly, both the government and the private sector could draw on foreign capital flows. In 1977, for example, foreigners purchased \$31.5 billion of U.S. Government securities, equal to about 55 percent of new issues. Over the 1983-85 period, slightly higher interest rates might induce future foreign purchases of securities, but it is hard to see this being enough to finance a large percentage of a

Table 12

Funds Raised in the Credit and Equity Markets

By calendar year

Calendar year	Total funds raised in credit markets* (billions of dollars)	Federal financing		State and municipal financing		Nonfinancial business		Households		Foreign	
		Billions of dollars	% of total funds raised	Billions of dollars	% of total funds raised	Billions of dollars	% of total funds raised	Billions of dollars	% of total funds raised	Billions of dollars	% of total funds raised
1973	201.7	8.3	4.1	13.2	6.5	96.4	47.8	77.7	38.5	6.1	3.0
1974	193.9	11.8	6.1	15.5	8.0	98.0	50.5	53.9	27.8	14.8	7.6
1975	214.4	85.4	39.8	13.7	6.4	51.6	24.1	52.1	24.3	11.5	5.4
1976	273.5	69.0	25.2	15.2	5.6	80.2	29.3	89.5	32.7	19.6	7.2
1977	334.3	56.8	17.0	15.4	4.6	110.9	33.2	137.3	41.1	13.9	4.2
1978	401.7	53.7	13.4	19.1	4.8	126.3	31.5	169.3	42.1	33.2	8.3
1979	402.0	37.4	9.3	20.2	5.0	146.9	36.5	176.5	43.9	21.0	5.2
1980	397.1	79.2	19.9	27.3	6.9	143.9	36.2	117.5	29.6	29.3	7.4
1981	406.9	87.4	21.5	22.3	5.5	149.5	36.7	120.4	29.6	27.3	6.7
1982	440.7	161.3	36.6	45.8	10.4	128.5	29.2	88.5	20.1	16.6	3.8

Projection

Calendar year	Total funds raised†		Public-sector borrowing		Public percentage of total		Private percentage of total (residual)‡	
	8-8½ % scenario (billions of dollars)	11-11½ % scenario (billions of dollars)	Federal (billions of dollars)	State-local (billions of dollars)	8-8½ % scenario (percent)	11-11½ % scenario (percent)	8-8½ % scenario (percent)	11-11½ % scenario (percent)
1983	447	589	214	45	57.9	44.0	42.1	56.0
1984	447	616	237	43	62.6	45.4	37.1	54.6
1985	471	673	243	46	61.3	42.9	38.7	57.1

*Includes nonfinancial foreign borrowing and new equity issues.

†Assumes 8½-11½ percent range for 1983 and 8-11 percent range for 1984 and 1985.

‡Business, households, and foreign.

\$225 billion deficit unless interest rates and the dollar rise appreciably.

Another second-order effect is that, with somewhat higher interest rates, the personal saving rate might increase. That would mean credit could grow more rapidly not because the economy was expanding faster (as would be the case with a constant saving rate) but because of a rise in the desire to save on the part of individuals. The statistical evidence on the relationship between interest rates and the personal saving rate is not very convincing, however.

Foreign capital flows and a change in personal saving rates are just two of the second-order effects that could reduce the upward pressure that large deficits exert on interest rates. There may be others. But, even under complete flow-of-funds forecasts, second-order effects are insufficient to counter the unprecedented size of the projected deficits.⁷ Thus, returning to the initial hypothesis, it does appear reasonable to conclude that the prospects of large Federal deficits has served as a constraint on the ability of monetary policy to reduce intermediate- and long-term interest rates by actions that result in lower short-term rates.

One attempt to quantify the effect of the deficits on current interest rates has concluded that, because the financial markets foresee an endless stream of \$200 billion budget deficits, corporate bond yields are 160 basis points higher than they would be if the expectation were for a series of \$100 billion deficits. The econometric equation, formulated by Allen Sinai, shows that over the last few years, the outlook for deficits has become an important variable in the determination of long-term interest rates.⁸ The precise estimate made by Sinai may be subject to some question, since large deficits are only a recent phenomenon and there is more uncertainty attached to an estimate obtained with just a few data points. But the magnitude of the estimated effect lends support to those who argue that large projected deficits are keeping long-term rates higher than they would otherwise be, limiting the ability of monetary policy to induce recovery, and ultimately slowing down the recovery.

⁷ Cary Leahey and Allen Sinai, "Funds Raised in U.S. Financial Markets: An Econometric Study", Data Resources Incorporated, *Review of the U.S. Economy* (May 1983)

⁸ Allen Sinai, "Deficits, Capital Markets, and the Economy", Testimony for the House Subcommittee on Telecommunications, Consumer Protection, and Finance (April 14, 1983). This research differs from previous econometric work where the effect of deficits on rates appears at best to be ambiguous. Sinai used forward or projected deficits in his equation rather than previous or lagged deficits.

Table 13

Saving as a Percentage of GNP

By calendar year

Item	1961	1971	1985 projection
	to 1970	to 1980	
Gross private saving	16.4	16.9	17.5
Personal	4.7	4.9	4.0
Business	11.7	12.0	13.5
Total use of saving	16.4	16.9	17.5
Less			
Financing the Federal deficit	0.5	1.9	5.9
Other*	0.5	-0.9	-2.6
Equals			
Amount available for gross private investments	15.4	15.9	14.2
Addendum			
Capital consumption allowance	8.4	9.9	11.0
Amount available for net new private investments	7.0	6.0	3.2

* Includes net foreign investment and state and local deficits.

The long term

The long-term and near-term effects of deficits are related. The analysis just completed has suggested that the expectation of future interest rate pressures may be keeping current long-term rates high. But there is another sense in which some argue that deficits are a long-term problem.

For the longer term, a reasonable case can be made for the proposition that the growth of the money stock is the critical variable in the determination of the level of *nominal* GNP. In other words, the LM curve, when the analysis is done in nominal terms, is nearly vertical (Chart 5 on page 40). Once a money growth-nominal GNP path is determined, it can be argued that fiscal policy will affect the mix of GNP—both in terms of its real-inflation composition and its relative shares of consumption, investment, government purchases, and exports.

An expansive long-run fiscal policy, given the current composition of the budget, appears to mean a GNP more heavily weighted toward consumption and defense expenditures than toward investment in plant and equipment. By 1985—three years into a recovery—the deficit under current policies would be about 6 percent of GNP. Under what may be generous assumptions for personal and business saving, this would mean that net saving available for new private investment—as a

share of GNP—would be about one half the average of the 1960s and 1970s (Table 13).

No one knows for sure the precise magnitude of the effect of capital formation on productivity growth. One analysis estimates that in the period 1948-73, when output per man-hour grew by an average of 2.9 percent per year, productivity growth stemming from capital formation was about 0.75 percent per year. In the subsequent period, 1973-78, when productivity growth slowed to 1.2 percent per year, the contribution of capital formation was only 0.21 percent, contributing a considerable amount to the productivity slowdown.⁹ Somewhat different estimates of the effect of capital formation have been made by other scholars, using different measures of capital, labor, and output. But the results all show that capital formation does have an important positive effect on productivity growth.

One of the significant implications of large deficits and weak capital formation is that the real-inflation mix of GNP in the long term (under a given set of monetary targets) may be more heavily weighted toward inflation. Thus, the long-term problem with large deficits, aside from the anticipated interest rate pressures, is that the deficits may ultimately have an unfavorable effect on the composition of GNP.

Conclusion

The analysis presented here has attempted to delineate the forces that have contributed to the rise in the

Federal budget deficits projected for the 1980s and to put the effects of large projected deficits into a broader economic perspective. The tax cut is clearly one reason for the increase in deficit, but, even if it were not for that, decisions to increase the real resources for defense and the relentless growth of medicare and social security would have caused the expenditure-revenue gap to widen. More rapid economic growth and faster inflation could narrow the projected gap somewhat, but even under record GNP growth for 1984-88 the projection is for deficits well in excess of those experienced on average during the postwar period.

It is reasonable to conclude that, from the short-run perspective, anticipation of large Federal deficits has reduced the effectiveness of monetary policy. Certainly, Federal Reserve actions can lead to lower or higher short-term interest rates. But analysis of projected deficits and private demands on the credit markets clearly lends support to market fears of either a monetary-fiscal policy clash in 1984 or 1985 or an inflationary monetary policy if such a clash is avoided. And there is evidence that these fears would be an important factor that could prevent long-term rates from falling very much even if the Federal Reserve were to take actions to reduce short-term interest rates.

From the long-term perspective, while monetary policy can have an important effect on the level of nominal GNP, it can do much less to affect the composition. Under reasonable assumptions about the future growth of GNP, projected deficits of \$200-250 billion in 1984-85 would result in saving available for capital formation that would be very much below the experience of the 1960s and 1970s, with negative consequences for long-run productivity growth.

James R. Capra

⁹ Norsworthy, Harper, and Kunze, *op cit*