CHAPTER 1

Economic Policy and Outlook

THE U.S. ECONOMY is now recovering from the most severe recession in postwar history. Spurred by a lower inflation rate, tax cuts, and increasing employment, significant gains have already been made in the purchasing power of consumers. Production has been rising rapidly since the spring of last year. But because this recovery started from very low levels of resource utilization, unemployment will almost surely remain distressingly high this year even though large gains in employment are expected during 1976. The social hardships and economic waste associated with the current level of unemployment should not be underestimated. Accordingly, we must seek to lower unemployment as rapidly as is consistent with the need to ensure that the reductions will be lasting. Policies that might speed the decline in unemployment in the short run should not be so expansionary as to lead to increased instability and greater social hardships in the long run. Thus, policies for 1976 must attempt to sustain the recovery now in progress but at a pace sufficiently moderate to prevent renewed imbalances and a rise in inflation. They must also continue to mitigate the hardships associated with high unemployment. At the same time, our present policies must lay the foundations for a long period of steady growth.

THE NEED FOR A DURABLE RECOVERY

Because we began the present recovery with more slack than in any of the previous postwar cycles, a much longer period of above-average growth will be required for a return to full resource utilization. Even under the best of circumstances the return to full employment cannot realistically be accomplished this year or next. To ensure that we return to high levels of resource utilization—as is our objective—the recovery must therefore be a durable one.

Our best estimate is that real gross national product (GNP) will be 6 to 6½ percent higher in 1976 than in 1975. This growth rate is not a goal. Rather, it is a projected outcome of the forces of recovery that were set in motion in 1975, by stimulative fiscal measures, by a return of consumer and business confidence, and by external economic factors discussed elsewhere in this *Report*. The availability of much unemployed labor and unused plant capacity requires that economic policy should continue

to support an economic expansion at growth rates significantly above the long-term growth of capacity output. But our knowledge of the interdependence between real growth and inflation is not sufficiently precise to permit a direct translation from general goals to specific targets. As a consequence, policies cannot be designed to reach any particular targets with a high degree of confidence. We believe, however, that policies consistent with a moderate but sustained recovery offer a far safer and surer route to full employment than policies which attempt to engineer a very rapid return to full capacity. What we need is a durable recovery—not a boom that carries the seeds of renewed instability in prices, incomes, and employment. Our view is based on several considerations.

The difficult inflationary period through which we have come makes it likely that overly expansionary policies, which risk increasing inflationary pressures, will quickly influence consumers' and producers' expectations. It is a harsh fact of economic life that expectations of inflation are built into labor and other contracts in such a way as to be partly self-fulfilling. Moreover, increased inflationary expectations could restrain both consumption and investment expenditures and thus jeopardize long-term economic goals. High and variable rates of inflation not only create imbalances and sectoral distortions by capriciously changing the real value of existing contracts, but they also raise risk premiums in investment decisions and in wage bargains. As such, inflation could pose a major threat to the viability of the present recovery. Policies that are perceived to entail higher inflation risks may not, therefore, affect economic activity and employment in a way that would normally be expected. Even if such policies should succeed in accelerating the recovery in the short run, it would be difficult to decelerate from unusually rapid growth rates to sustainable rates without running the risk of amplifying future fluctuations in economic activity.

There is a lesson to be drawn from past policy mistakes. The history of monetary and fiscal policies demonstrates that we have a great deal to learn about implementing discretionary policy changes. Our ability to forecast is at best imperfect, especially in an increasingly complex and interdependent world, and the difficulties in forecasting grow larger as we extend the period for which the forecast is made. This is a significant problem because of the time lags involved in altering the pace of economic activity through discretionary monetary and fiscal actions. There is a perception lag in diagnosing the problem, a reaction lag in selecting the appropriate response, and an implementation lag in having the policy prescription accepted and put into effect through our political and administrative processes.

We also lack reliable estimates of how long it takes before the economy responds to policies once they are undertaken and how large the response will be. This is especially true now because the high rates of inflation in recent years have made price expectations a much more important deter-

minant of consumer and business behavior than they formerly were, but there has not been sufficient experience to pin down how inflationary processes affect key relationships within the economy. With respect to fiscal policy there is the additional complication that countercyclical increases in Government expenditures are difficult to check during later upswings. Because countercyclical policy changes may be slow to take hold and then hard to reverse, their effects may extend well past the time when they are most needed. Consequently a significant danger exists that, instead of smoothing economic fluctuations, discretionary changes in policy aimed at demand management may themselves become a source of economic instability.

The proper conclusion is not that we should forswear the use of discretionary policy. Some external shocks to the economic system can and should be offset. Furthermore, provided the growth in Federal outlays becomes more moderate than in the years just past, occasional discretionary adjustments of the income tax schedules are called for in order to prevent excessive growth in Federal taxes. In fact these changes may have to be more frequent if the rate of inflation continues at a somewhat higher average level than at comparable levels of economic activity in the past. Thus, discretionary policies do have an important function in our economic system. But we must be mindful of the great difficulties in successfully executing countercyclical policies.

What is called for in our judgment is a steadier course in macroeconomic policies than has been followed in the past. We should set policies broadly consistent with sustainable long-term noninflationary growth and try to limit the size and duration of any policy deviations that promise short-term benefits but risk interfering with our long-run goals. The severity of the recent recession does call for maintaining stimulative economic policies to accommodate an expansion of real output at a rate above that sustainable in the long run. But departures from the policies that are appropriate in the long run should be moderate. If we do not commit ourselves to a gradual recovery over a period of years, we may increase economic instability and lose our chance for sustainable growth, which we believe offers the safest and surest route to full employment in future years.

MONETARY AND FISCAL POLICIES

It is much easier to enunciate the general principle of stability in policy than to apply it to specific circumstances. The challenge to current monetary and fiscal policy is to set the stage for a gradual transition from stimulation, which is still needed in the current year, to a set of policies appropriate for long-run growth.

The monetary authorities recognize that the present levels of output and employment are still very far from satisfactory. Yet concern with the achievement of greater economic stability in future years suggests that any rate of growth in money which is at the upper limit of the tolerance range an-

nounced by the Federal Reserve (7½ percent for M_1, 10½ percent for M_2), could not be maintained indefinitely if progress toward lower inflation rates is to continue.

The thrust of fiscal policy will also have to change gradually. Fiscal policy became more expansionary when the recession worsened and unemployment mounted in 1974 and in early 1975. Over the near term, these expansionary fiscal policies will be maintained as most of the provisions of the Tax Reduction Act of 1975 have been extended from the end of last year to the middle of this year through the Revenue Adjustment Act of 1975. Well before passage of that act, the President directed the Office of Management and Budget to examine ways to slow the growth in Federal expenditures so as to prevent further increases in the Government's role in allocating our resources. He further directed that any savings be refunded to taxpayers in order to maintain gains in private purchasing power and employment. The budget which the President has proposed provides for a marked deceleration in the growth of Federal spending, as outlays are to be held to $394 billion in fiscal 1977, which ends in September of next year. Starting in July 1976, taxes are to be cut by about $28 billion relative to what they would be under 1974 law. Because of the recovery, Federal receipts are then expected to grow over three times as fast as outlays between fiscal 1976 and fiscal 1977 causing the deficit to fall by more than $30 billion. However, the full-employment balance on a national income accounts basis, will show little change during calendar 1976 from the $6-billion deficit estimated for the second half of last year. In this way the fiscal policy stimulus will be maintained throughout 1976. It will then be reduced in 1977 because of the proposed increase in social security tax rates and the much faster rise in individual income tax receipts than Federal expenditures.

At the present time, with substantial reserves of labor and capacity available, consumption and investment are complements, not substitutes. Indeed, public expenditures in excess of tax receipts are needed to absorb the excess of private saving over private investment demand at current levels of economic activity. In 1977 and beyond, however, private investment and publicly supported consumption will become increasingly competitive. To avoid inducing a policy and output mix that is incompatible with the requirements of long-term economic growth, fiscal stimulus must be diminished gradually during coming years. Without greater fiscal restraint, the saving flows available for private capital formation might eventually become too small. Furthermore the danger of intensifying inflationary pressures under such conditions would preclude expanding the money supply sufficiently to finance both the Government deficits and the needed improvements and growth in our industrial capacity.

It is this public-versus-private allocation problem to which the President's program tying a $28-billion cut in the growth of Federal outlays to a comparable cut in taxes is addressed. The source of the problem has been the rapid growth in nondefense budget expenditures in recent years. During

the 1960s some growth in the share of national resources allocated to the nondefense expenditures of the Federal Government was considered desirable in order to alleviate poverty and to accomplish other important social goals. Further growth in the ratio of public expenditures to total output, however, directly bears on fundamental issues concerning the efficiency of the economy, equity for the working population, and the scope for private decision making in our economy.

ENERGY POLICIES

The Energy Policy and Conservation Act enacted in the closing days of 1975 initially reduces the price of crude oil produced domestically, but its immediate effect on the prices of petroleum products is still uncertain. Under this act the 1976 rate of increase in the average price received for domestically produced crude oil will equal the percentage rise in the GNP deflator between preceding quarters. An additional 3 percent increase can be granted during 1976 upon a Presidential finding that this increase will stimulate the supply of domestic petroleum. However, the total price increase may not exceed 10 percent during the first year. The act also authorizes the President to propose further oil price increases, subject to disapproval by either House of Congress. Oil price controls are no longer mandated 40 months after the date of enactment, but the act itself is in force for 5 years. Government controls on the prices of individual petroleum products and on the allocation of these products among consumers can be removed under authority granted by the legislation.

The $2 per barrel special import fee on crude oil was removed in December of last year. In conjunction with the rollback of domestic crude prices at the start of 1976, this is expected to cause the average price of crude oil entering refineries to be somewhat lower during 1976 than it was in 1975, despite the increase in world market prices. Furthermore, because the initial price rollback mandated by the new law will probably not be fully offset by price increases authorized later in 1976, the average price received by domestic producers at the end of 1976 will most likely still be slightly below that received by them at the end of 1975. Whether domestic oil prices approach world market levels by 1979, when controls may be removed, depends on foreign pricing behavior and on the extent to which the authority provided in the act is used to obtain higher prices for domestic production.

While the Energy Policy and Conservation Act clarified the near-term outlook for domestic oil prices, the outlook for both the price and the supply of natural gas remains uncertain. Adequate supplies of natural gas may not be available in 1976 and beyond. Severe curtailments of gas supplies to industry were avoided in both 1974 and 1975 because unusually warm weather and the low level of economic activity reduced demand. Nonetheless, the volume of curtailments rose in each of those years and will almost certainly rise in 1976 as well. When shortages do occur, some of their harmful effects can be alleviated temporarily by emergency procedures adopted by the Fed-

eral Power Commission, but more fundamental changes are necessary. Deregulation of the price of new natural gas, as proposed by the Administration and accepted by the Senate in 1975, would redirect supplies toward their most valuable uses, increase incentives to enlarge future supplies, and lead to reduced imports of oil and liquid natural gas.

THE OUTLOOK

The policies outlined above should sustain the recovery in the near term while providing the foundations for sound growth over the longer term. With real GNP estimated to grow by 6–6½ percent from 1975 to 1976, the unemployment rate should fall by almost a full percentage point. The rate of inflation is expected to continue with little change from late 1975 throughout this year; and hence the GNP deflator, which had risen by 9 percent from 1974 to 1975, should rise by only about 6 percent from 1975 to 1976.

Thus far the recovery has been accelerated by a very sharp change in the behavior of inventories, while real final sales have shown fairly steady growth since the first quarter of last year. As detailed in Chapter 2, the sudden cessation of high rates of inventory liquidation in mid-1975 accounted for a substantial part of the growth in real GNP during the last half of that year. The bulk of excess inventories appears to have been worked off, and more normal rates of inventory accumulation should become evident in 1976. Nevertheless, year over year, almost 1½ percentage points of the growth in real GNP will still be due to the inventory swing. Once inventories reach desired levels, the continued strength of the recovery will depend on the vigor of final demand for goods and services.

CONSUMPTION

Personal consumption expenditures are expected to impart considerable strength to the economy. During 1976 consumption is projected to rise by almost 6 percent in real terms, compared with 3.9 percent during 1975, yielding a year-to-year increase of 5 percent. A close to 6 percent rise during 1976 is consistent with about 5 percent growth in real disposable income, because the average saving rate is projected to fall below the abnormally high 8¼ percent level registered last year. A gradual decline in the saving rate is predicated on year-over-year declines in the rate of increase in consumer prices and in unemployment and layoff rates. Even so, the saving rate for 1976 is expected to remain above its 7 percent average for the previous cycle (1969–73).

Recent experience suggests that consumers react to heightened inflationary expectations by saving more, rather than by advancing their purchases of storable commodities. Thus we expect a fall in desired saving, or a rise in the propensity to consume, as lower inflation rates are incorporated into consumer expectations. Uncertainties which tend to reduce consumption are also created by high unemployment rates and particularly by high rates

of job layoffs. As the unemployment rate and layoff rate continue to recede, we would therefore expect an alleviation of concern about job security to manifest itself in reduced saving and higher consumption in the household sector. Increased consumer confidence and lower saving rates may also result from the partial restoration during 1975 of the real financial assets of households, which had eroded severely in 1973 and 1974.

Consumer expenditures on durable goods should increase much more rapidly than spending on nondurables and services. The expected rise in automobile production and purchases could become steeper in the second half of this year, when 1977 models with substantially improved fuel economy and engineering features are scheduled for introduction. Sales of furniture and household equipment should be stimulated by the projected rise in housing completions.

In 1975 over one-third of the $91-billion growth in personal income from 1974 was due to the rise in government transfer payments. Disposable income grew proportionately more than personal income because of the Tax Reduction Act of 1975. From 1975 to 1976, government transfer payments and disposable income should both grow less rapidly than personal income in spite of the additional tax cuts accruing from adoption of the President's budget program. Hence, while the growth in personal consumption expenditures led the recovery in final sales that started early last year, the role of continuing the recovery beyond 1976 must increasingly be taken over by fixed investment.

NONRESIDENTIAL FIXED INVESTMENT

Nonresidential fixed investment normally lags in economic recoveries, and it is likely to do so again. Nevertheless we expect some strength to develop in business investment in the course of 1976, on the assumption that substantial modernization in plant and facilities will be planned and readily financed. A sustained rise in profits, retained earnings, and cash flow in this year and next should allow the share of business fixed investment in GNP to continue to grow, even as debt-equity ratios are reduced toward desired levels.

According to a recent survey conducted by the Department of Commerce, businesses plan to increase capital spending by 5½ percent from 1975 to 1976. Assuming that prices of capital goods rise by about 6–7 percent per annum, this implies a decline in real business fixed investment which is inconsistent with past behavior during comparable stages of recovery. During the early stages of recoveries, businesses usually underestimate the strength of final sales. Even though the present recovery started from a lower measured rate of capacity utilization than previous recoveries, businesses are likely to spend more on new plant and equipment in 1976 than they expected at the start of this year, and the year-to-year rise could be as high as 4–5 percent in real terms, or approximately 8 percent from the second half of 1975 to the second half of 1976.

While the previous cyclical lows in the Federal Reserve's capacity utilization index for manufacturing were 75 percent in both 1958 and 1971, this index fell to less than 70 percent in 1975. In recent years, however, the rate of economic obsolescence of existing plant and equipment may have accelerated because the desired combinations of inputs, outputs, and production techniques have been altered by recent sharp changes in relative costs and prices. For this reason the exceptionally high level of spare capacity in the present recovery is expected to have less effect in slowing the recovery of investment spending from its current low level. Partly because of the need for modernization, investment in equipment is expected to rise faster than investment in structures. In the nonmanufacturing sector, public utilities believe that investment will rise significantly this year after a rapid increase in starts and in carryover of investment projects from last year.

Even if real business fixed investment grows by as much as 8 percent from the second half of 1975 to the second half of this year, the growth rate will be low by historical standards. Table 1 shows that the ratio of real business fixed investment to GNP would grow no faster than in preceding recoveries and would still be only 9.4 percent in the second half of 1976. This is particularly disappointing since it is shown later in this chapter that higher ratios of business fixed investment to GNP are likely to be necessary in future years if the capital required for an eventual return to high employment, greater energy independence, and a cleaner environment is to be in place by the end of 1980. Some further growth in the share of profits in national income may be required before the share of business fixed investment in GNP can rise.

The cyclical rebound in the profit share that started in 1975 is expected to continue in 1976; and equally important, the share of book profits accounted for by inventory profits will remain low. Since inventory profits, which are realized mainly by firms using the first in, first out (FIFO) method of inventory accounting, are part of taxable book profits, their taxation reduces

TABLE 1.—*Growth rates of real business fixed investment and change in its share in real gross national product in recovery periods, 1955–76*

Period	Annual growth rate of real business fixed investment [1] (percent)	Shares of real business fixed investment in real GNP	
		Actual share [2] (percent)	Change in share (percentage points)
From a year earlier to:			
1955 IV–1956 I	15.3	8.9 to 9.7	0.8
1959: III–IV	10.8	8.4 to 8.9	.5
1962: II–III	9.8	8.7 to 9.0	.3
1972: I–II	6.0	9.8 to 9.9	.1
1976: III–IV [3]	7.9	9.2 to 9.4	.2

[1] Change from half year following cyclical trough quarter to corresponding period a year later. The following quarters are those designated as cyclical troughs by the National Bureau of Economic Research (NBER): 1954 III, 1958 II, and 1961 I. Subsequent trough quarters are assumed to be 1970 IV and 1975 II as NBER has not designated these quarters as cyclical troughs.
[2] Shares for the two half years used in computing the growth rates in column 1.
[3] Projection.

Sources: Department of Commerce (Bureau of Economic Analysis) and National Bureau of Economic Research.

cash flow available for the expansion of both fixed and working capital. If inventory profits should be more than $20 billion lower in 1976 than in 1974, as we expect, nonfinancial corporations will save at least $8 billion in taxes, or about three times as much as the annual tax savings from the higher investment tax credits provided in 1975 and 1976. Even more important, operating profits may be increasing by over 25 percent from 1975 to 1976, more than twice as fast as national income, while dividends will rise less than profits. The resulting level of corporate cash flow, excluding inventory profits, may be about equal to the total fixed investment in depreciable assets projected for nonfinancial corporations in 1976. Adjusted for inventory profits, the contribution of cash flow has not been this high since 1965, although internally generated funds generally matched annual purchases of physical assets from 1955 to 1965. The gain in cash flow would be all the more impressive since net interest paid by nonfinancial corporations is expected to be about six times as large in 1976 as it was in 1965. This rapid growth in interest payments is attributable to higher inflation premiums in interest rates and to the sharp expansion in corporate debt over the past decade.

HOUSING AND RESIDENTIAL INVESTMENT

In the past, changes in the supply of mortgage credit rather than changes in demand have frequently dominated short-run movements in housing starts. But in 1975 demand factors, not the unavailability of mortgage credit, weakened the recovery in housing. In spite of large savings inflows into the thrift institutions, mortgage interest rates have declined little during the past year. The liquidity of the thrift institutions is expected to remain high in 1976, but the high stock of unsold new single-family homes and rapid cost increases, particularly in the land and materials components of home prices, suggest that there may be only a small further rise in single-family starts. On the other hand, the recovery of multifamily starts from the extremely depressed levels of 1975 should begin to accelerate in 1976, spurred in part by the $3 billion in mortgage commitment funds at 7½ percent interest released by the Government National Mortgage Association in January 1976. Thus total housing starts should reach a level of about 1¾ million units by year-end, and the real value of residential construction is expected to rise by about 30 percent from 1975 to 1976, on the strength of an almost 40 percent rise in housing starts.

Household formation rates, the demographic structure of households, and prospective attrition in the existing housing stock are the factors most important to the long-run outlook for housing starts. During the first half of the seventies, the average annual increase in the number of households was approximately 1.5 million. According to the Census Bureau's middle projection (Series B), the number of households is expected to continue to grow at this rate during the remainder of the seventies. The demand for new dwelling units will be raised further by normal growth in the number

of vacant units and second homes, by the demolition of old units, and by other losses, including conversion to other uses.

It has been estimated that since the Korean war 0.8 percent of the housing stock has been replaced each year on the average, but in recent years existing units have become more profitable to retain. The costs of new construction and new financing have risen faster than most other costs; and sewer moratoriums, land use controls, and zoning and environmental restrictions have also limited new supplies. Thus the 1.7–1.8 million starts projected for the end of 1976 may not be far below what may become normal levels if replacement demands should decline.

Most of the growth in housing starts during the current year is projected to come from multifamily starts. In future years such starts could account for 35–40 percent of the total, excluding mobile homes, compared with only about 24 percent in 1975. The proportion of households and primary individuals owning homes may grow only slightly in coming years, and the replacement rate of multifamily units may be larger than that of single-family units. Moreover the declining average size of households and the continuing adjustment to sharply higher energy and land prices will favor the growth of multiple-dwelling units over single-family homes.

By the end of 1976 multifamily starts may still account for less than 35 percent of total starts, because a large overhang of foreclosed or delinquent projects has depressed prices and discouraged construction financing in many parts of the country. Sales of newly constructed condominium units have been slow, and the profitability of new apartment houses has remained low because rents have risen far less than other prices.

Federally assisted starts under the Section 8 leasing program and the Section 235 homeownership program of the Housing and Urban Development Act are expected to raise total starts by 5–9 percent this year. Over a period of years any increase in federally assisted housing starts would be largely offset by a decrease in unassisted starts, but this factor will not be important in 1976.

INVENTORIES AND NET EXPORTS

The extraordinary reduction in inventories in the first half of last year, together with the faster growth in final sales which began in the second quarter, restored inventories to more normal levels. By the end of 1975 the ratio of real business inventories to final sales was the same as the average for 1969–73 and lower than the ratio for 1974, when large inventory accumulations had occurred. The ratio of inventories to sales is expected to decline a little more in early 1976. We estimate that the stock of inventories will grow at about the same rate as final sales after the middle of 1976.

During the first half the annual rate of growth in GNP should exceed the growth in final sales before the return to normal rates of inventory accumulation is completed. The growth in domestic sales should be greater than the

growth in total sales, because net exports are expected to decline throughout this year from their recent high levels. In the first half large shipments of agricultural commodities, particularly to the Soviet Union, should offset part of the increased imports that normally accompany the growth in domestic income and production. Thereafter we expect the growth in exports to fall farther below the growth in imports, because the U.S. recovery started earlier than those of most of our major trading partners. The structure of foreign sales is such that our exports, particularly those of capital goods, are unlikely to rise rapidly until the recoveries abroad have become more advanced. One should point out, however, that movements in both inventories and net exports have proved extremely difficult to forecast.

FEDERAL AND STATE AND LOCAL GOVERNMENT PURCHASES

In real terms Federal purchases are expected to grow by only 1 percent from 1975 to 1976, and State and local government purchases by 2–3 percent. Purchases of goods and services currently account for about 35 percent of total Federal expenditures, but for over 90 percent of the total expenditures of State and local governments.

Mainly because of diminishing defense expenditures, the real value of Federal purchases declined in every year from 1968 to 1975; and Federal purchases in 1976 will still be one-fourth below their 1968 peak. The average annual growth rate of real State and local government purchases, however, was about 4 percent from 1968 to 1973. This rate then declined by almost half, largely as a consequence of the recession of 1974–75 and the financing difficulties experienced by some State and local units of government.

Owing to measures already taken and to longer-run factors that will help to slow expenditure growth, most State and local governments will be able to cope with expenditure pressures without adding unduly to the tax burdens of their citizens in this and the coming year. The growth rate of State and local government employment remained moderate in 1975 if one excludes expanded public service employment and summer youth employment funded through Federal grants. Furthermore the growth in construction expenditures by State and local governments is expected to continue to decline as the school-age population falls and as the interstate highway building program approaches completion. Higher-density residence patterns and more concentrated commercial development projects will tend to reduce the growth in local expenditures because they lower the demand for new access roads, municipal utility lines, and related facilities. Higher municipal bond rates due to inflation and to the larger risk premiums which some units of government have encountered are also restricting construction, in some cases because the maximum interest rate that State and local governments can pay is limited by law.

Slower growth in purchases by State and local governments, tax increases, and the beneficial effects of economic recovery on State and local receipts helped eliminate the operating deficit of these units in the second half of

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1975. Assuming that purchases of goods and services will continue to advance by less than 3 percent a year in real terms, compared with more than 4 percent in most years from 1963 to 1973, the operating budget of State and local governments as a group should be in surplus in 1976 if the recovery continues as expected. The surplus could be quite large if those governmental units whose credit rating and borrowing ability have been impaired in recent years continue to retrench, and if their savings are not matched by more expansionary policies on the part of governmental units which have remained fiscally sound. State and local governments sometimes accelerate expenditure growth during the advanced stages of recovery, but they will probably wait longer than usual to do so in the current upturn, particularly if the rate of growth in Federal grants is reduced below the high rates that have prevailed so far in the seventies.

The general revenue sharing program, which provided for $30 billion of grants to State and local governments from 1972 through 1976, is expected to be renewed in 1976. When it was introduced in a period of high and rising economic activity, it may have encouraged State and local governments to overextend themselves during that expansion. Failure to renew the general revenue sharing program in 1976, however, could weaken the fiscal stability of State and local governments just when they have adjusted to the loss in receipts resulting from the 1974–75 recession.

The Federal Government, during the 1975 budget crisis of New York City, indicated a determination not to underwrite continued massive growth in local spending. Aided by those redistributional mechanisms already built into the established Federal grant programs, State and local governments are now likely to provide for cyclical fluctuations by accumulating more reserves during periods of high economic activity than they have done in the past. In 1976, Federal grants-in-aid to State and local governments are budgeted to rise by about $5 billion, compared with more than $10 billion from 1974 to 1975. Thus at least 75 percent of the expected growth in the expenditures of State and local governments in 1976 will have to be financed from their own sources.

RISKS IN THE FORECAST—THE INFLATION OUTLOOK

Although a sustained expansion in production and employment is expected with current policies, as always a number of factors could throw the recovery off track. The most important would be a resurgence of inflation. We have projected that the rate of price increase will not accelerate and will even decline somewhat from 1975 to 1976. If this price forecast should be too low, both consumer and business spending could be adversely affected.

As noted above, recent experience suggests that consumers react to heightened expectations of inflation by increasing their saving and reducing their consumption, even of those durable goods that might be expected to provide an inflation hedge. Furthermore the rise in interest rates associated with higher rates of inflation could induce disintermediation and threaten the

projected recovery in housing starts. A sustained rise in the rate of inflation would also undermine the prospect for gains in business investment. Under current tax laws, inflation raises the real tax liabilities of corporations both in the present and in future years. Moreover, the increased macroeconomic instability invariably associated with high rates of inflation drives up risk premiums in financial markets. Hence the outlook for prices has a crucial bearing on whether the output forecast can be realized.

The past year has shown once again that the rate of change in product and factor prices is not permanently insensitive to reductions in demand. However, it has also shown that inflationary expectations, once aroused, acquire a powerful momentum that can be reduced only gradually and then at great social cost and economic hardship. As the Government adheres to a policy designed to prevent a resurgence of inflation, the behavior of the private sector helps determine how large or how small the costs of holding down the rate of inflation will be.

In the short run, "cost push" factors can influence the rate of inflation and unemployment and thereby set in motion Government policies that may have lasting effects. When such external shocks as the rise in international oil prices or other cost push factors increase the rate of inflation, Government authorities are faced with a painful dilemma. If they do not accommodate cost push factors by letting aggregate nominal demand rise sufficiently, then real output will fall and unemployment will increase to the extent that other prices resist downward pressure. On the other hand, if these shocks are fully accommodated, forces may be set in motion which perpetuate and even increase the inflation rate. Should the rate of inflation accelerate, heavier costs in unemployment, lower output, and forgone opportunities would eventually have to be incurred to bring it under control. For this reason it is important to examine the probable cost push pressures on prices over the near term.

The projected 6 percent rise in the price level from 1975 to 1976 is combined with a 5–6 percent increase in unit labor costs of private employees in the forecast. Since compensation per hour is projected to grow by 8–9 percent, the growth in output per hour is estimated to be at least one-third of this rise. Unit labor costs actually ceased to rise in the first 2 quarters of the present recovery, as productivity gains matched the rise in compensation per hour. In 1976, however, somewhat faster growth in compensation per hour and slower productivity growth will push the rise in unit labor costs close to the inflation rate expected for the year.

Because unit labor costs are the largest component of cost and because income shares tend to change rapidly only within but not between cycles, the rate of price increase and the rise in unit labor costs tend to converge in the long run. If changes in compensation per hour should accelerate beyond 9 percent in the near term, inflationary pressures could be intensified. As a consequence inflation rates higher than 6 percent could be built into the economy for some years to come. By the same token, if firms should

attempt to raise prices more rapidly than expected in the absence of any acceleration of either wages or the prices of materials in world markets, they too could jeopardize the process of recovery. Such price increases would initially slow the growth in real earnings of labor and then stimulate an acceleration of wage demands. Combined with the trend rate of growth in productivity, these accelerated wage increases would assure either a continuation of the increased pace of inflation or a lower real output level or both.

WAGE INCREASES IN 1976

Forecasting short-run changes in nominal or real wages is particularly risky in 1976 because of uncertainty about the rate of inflation and about the effect of the high, although declining, rate of unemployment. Normally the pressure for job applicants to accept lower wages would be expected to rise with increases in both the level and duration of unemployment. On the other hand, there may be less willingness to accept lower real wages because income maintenance programs, which have expanded rapidly in the last 2 years, replace a greater portion of income lost from unemployment than in previous cycles. Moreover, because of the rise in labor force participation by married women, a higher proportion of the unemployed belong to families in which at least one person is still working. For these reasons, real wages may not rise any less than they did at comparable stages of previous recoveries, in spite of the high level of the unemployment rate.

Nominal wage rate changes depend in part on the actual rate of price increases in the recent past and on the rate of inflation anticipated for the near future. If the rate of inflation had been approximately stable for a period of years, and if this were expected to continue, it would not be difficult to forecast the inflation component of nominal wage increases. We have, however, experienced several years of very high and unstable rates of inflation, and we lack good estimates of how the greater variability in inflation rates will be reflected in wage bargains. If, for example, a random burst of inflation occurs just prior to a wage settlement, it may have a significant effect on the size of the wage increase negotiated. We estimate, however, that with a forecasted 6 percent increase in the consumer price index (CPI) the rate of increase in nominal wages will be 8–9 percent from 1975 to 1976, about the same as the rise in compensation per hour in the private sector.

Wages for most private sector jobs are not determined by a formal collective bargaining process, but are rather the result of informal wage determination that is influenced, but not exclusively determined, by the competitive forces operating in labor markets. It is widely believed that major collective bargaining settlements have demonstration effects on wages throughout the economy. For instance, the wide publicity they receive may influence the wage and price expectations of other workers, and these workers will attempt to maintain their relative position in the wage structure. Money pro-

visions of collective bargaining agreements may also be formally or informally extended to nonunionized workers in the same plant or industry. Thus the forecasted increase in nominal wages could be upset if substantially higher wage settlements were received by workers in large unions. For these reasons it is important to examine the collective bargaining situation in 1976.

About one-fourth of all civilian employees are members of labor unions, and about 10 million union members are under major collective bargaining agreements (those covering 1,000 or more workers). About four-fifths of these contracts consist of 2- or 3-year agreements which are heavily front-loaded, that is, contracts in which first-year increases are considerably larger than those scheduled in the later years of the contract. Nearly 4½ million workers, or about 5 percent of all employees, are under a major contract that expires or is scheduled for reopening in 1976 (Table 2), while only 2¾ million workers negotiated new contracts in 1975. Hence a significant proportion of the 10 million workers under major collective bargaining agreements will be receiving first-year increases in 1976. Last year, first-year increases of slightly more than 10 percent were received by more than one-fourth of the workers under major agreements, and deferred increases averaged 5 percent for the remaining 72 percent. Cost-of-living adjustments (COLA) are not included in this comparison. If the new collective bargaining agreements for 1976 are similar to those of 1975, on balance 1¾ million workers would thus obtain wage increases about 5 percentage points higher

TABLE 2.—*Calendar of major private nonfarm collective bargaining activity, 1976*

Month	Principal industry	Contract expirations		Scheduled wage reopenings	
		Number	Workers covered (thousands)	Number	Workers covered (thousands)
All years		2,274	10,186	88	300
1976: Total		861	4,203	62	180
January	Apparel	34	153	5	24
February	Apparel; services	34	91	6	18
March	Trucking	74	669	5	15
April	Construction; rubber	133	413	7	23
May	Construction; apparel	169	593	11	21
June	Electrical equipment; food	119	543	12	34
July	Electrical equipment	73	221	4	20
August	Food (meat packing)	47	109	3	8
September	Motor vehicle and farm equipment	65	1,057	2	3
October	Food stores	40	106	4	6
November	Services	38	108	2	4
December	Electrical equipment; food stores	35	138	1	2
1977 and beyond		1,118	5,154	26	120
Year unknown or in negotiation [1]		295	828		

[1] Bargaining units for which necessary information was not available include 193 agreements which expired prior to Oct. 1, 1975 (when these data were tabulated) covering 556,000 workers, and 102 contracts which expired between October 1 and December 31, 1975, covering 272,000 workers.

Note.—Major agreements are those affecting 1,000 or more workers.
Detail may not add to totals because of rounding.

Source: Department of Labor, Bureau of Labor Statistics.

than those they received in 1975. In the course of 1976 this alone would add about seven-eighths of a percentage point to the 8–8½ percent average increases received by the 10 million workers under major collective bargaining agreements during 1975, but the effect would be only about half as large year over year.

A detailed tabulation of the deferred wage increases (excluding COLA) scheduled for the 5½ million workers in the second and third year of their contracts shows an average increase of 5.4 percent during 1976, almost the same as the 5.1 percent for such agreements in 1975. Escalator or cost-of-living clauses last year added approximately 2 percent to the base wages of all workers under major collective bargaining agreements. If the CPI rises by approximately 6 percent from December 1975 to December 1976, the addition to wages from cost-of-living adjustments in 1976 should be slightly lower than in 1975 because of somewhat lower inflation.

Assuming that there is a 6 percent increase in the CPI and that first-year settlements will be similar to those negotiated in 1975, the 10 million workers under major collective bargaining agreements will therefore receive wage increases of approximately 8½ to 9 percent from 1975 to 1976. Wage rate gains for the nonunionized workers are more sensitive to the business cycle and likely to be slightly less than those of union workers because of the continued high level of unemployment. Thus we do not expect wage increases for workers covered by major collective bargaining contracts to upset our overall wage forecast.

The translation of wage rate changes to changes in compensation per hour for all private employees requires an analysis of interindustry shifts of employment and of shifts between wage and salary workers in the composition of employment as well as the addition of fringe benefits. Our analysis indicates that these factors are likely to be largely offsetting this year and hence that increases in employee compensation per hour from 1975 to 1976 should average 8–9 percent in the private sector.

FOOD PRICES

Food prices are the most visible and best publicized of all the components of the CPI. For this reason they may be especially important in determining the wage demands of labor and the inflationary expectations of all consumers. Predicting price changes, however, is even more hazardous for food than for most other goods because of the inelastic demand and supply functions for agricultural products, and the possibility of large weather-induced shifts in supply.

The current outlook on the supply side is for increased production of meat and dairy products in 1976. There is evidence of larger placements of cattle on feed for fattening and of increased hog farrowing in early 1976. These developments should yield more fattened beef in the first half of 1976 and more pork by the second half. Milk production is beginning to show year-to-year increases. The supply of most vegetables for processing was up this past

fall. Although dry weather during the seeding period in parts of the winter wheat area has reduced the chances for a 1976 wheat harvest larger than that of 1975, the size of 1976 crops is impossible to forecast accurately at this time. The already evident increased supplies and lower prices for fertilizers should help 1976 crop yields compared to 1975.

The demand for food should rise as a result of economic recovery in the United States and abroad. Because the demand for most foods is relatively insensitive to changes in income, however, the demand for food should increase substantially less than that for most other goods.

Futures market prices tend to reflect all the information available on supply and demand to date. In early 1976 futures prices for agricultural products implied that wholesale commodity prices were expected to be little changed through mid-1976. Futures prices can, of course, change rapidly as economic conditions and expectations about future conditions change. In addition, the prices of processing and marketing services are not captured in futures prices. The cost of these services will probably increase more nearly in line with the general rate of inflation. On the whole, in contrast to the past 3 years, food prices are not likely to add to inflationary pressures during the first half of 1976. The same will be true of energy prices, as was already pointed out in the discussion of energy policy. These favorable developments should help prevent a rise in the expected rate of general price inflation above the 6 percent level in 1976.

WILL MONEY SUPPLY GROWTH BE APPROPRIATE?

Another question about the forecast is the amount of money needed to support the expected growth in nominal GNP. This question has been widely aired in the quarterly discussions of monetary policy instituted by the Congress last year. Some have wondered if monetary growth within the Federal Reserve's announced tolerance range would be adequate to support a sustained recovery, even if inflation moderates as expected.

In May 1975 the Federal Reserve announced explicit 1-year ranges of tolerance for the growth rates of the monetary aggregates: M_1, M_2, M_3, and the bank credit proxy. M_1 is the narrowly defined money supply, currency plus demand deposits. M_2 additionally includes commercial bank time and savings deposits other than large negotiable certificates of deposit. M_3 is a still broader measure obtained by adding time and savings deposits held at nonbank thrift institutions to M_2. Finally, the bank credit proxy is a measure of member bank loans and investments. The present base for the 1-year growth rates is the average level of the aggregates for the third quarter of 1975; hence the period for which the ranges now apply extends to the third quarter of 1976. The range of growth rates for M_1 is currently 5–7½ percent; for M_2 it is 7½–10½ percent; for M_3, 9–12 percent; and for the bank credit proxy, 6–9 percent. Neither the bases nor the ranges are immutable. Both have been changed in the past, and the Federal Reserve

has emphasized that it will change them in the future if circumstances require.

The concept of the demand for money provides a useful analytic framework for examining the adequacy of these money growth rates, since it supplies an important link between money on the one hand, and income and expenditures on the other. There has been a great deal of discussion of which monetary aggregate should be used to measure the demand for money. The consensus seems to be that either M_1 or M_2 will do, but M_1 has generally been the preferred definition.

Much of the theory and most of the postwar evidence on the demand for money have been couched in terms of M_1. However, there is some recent evidence, although still quite tentative, that the demand for M_1 may have shifted down for given levels of income and interest rates. Hence it is possible that the way in which money was related to income and interest rates in the past will not hold in the future. However, some of the reasons given below why the demand for M_1 may have shifted down can provide clues to how it will behave in the future. It is therefore still useful to focus on M_1 growth, although it must be recognized that a fuller analysis of monetary policy should include some reference to the broader aggregates like M_2 and M_3.

The question about what is an appropriate expansion of the money supply can be expressed in terms of velocity growth. The growth rate of nominal GNP is the sum of the growth rates of the money stock and velocity. Consequently, if we take the price path as given, the appropriateness of various monetary growth paths in achieving various real growth objectives depends on the growth in velocity. The question then is whether the velocity growth implied by the forecast is consistent with what the past behavior of velocity would predict.

A large body of evidence has pointed to the stability of the long-run demand function for money, on which the ability to predict movements in velocity from cycle to cycle depends. However, the evidence that the function is stable in the short run is much less clear cut. Considerable controversy still surrounds the behavior of money demand in the short run, and velocity movements do exhibit considerable variation over short periods of time.

The figures in Table 3 illustrate this distinction. The second column shows the average rates of growth of velocity from peak to peak in each of the five previous postwar business cycles. The differences in the average rates of growth of velocity over the various cycles are consistent with a stable long-run money-demand function. The successive declines in the average from cycle to cycle do not reflect autonomous secular declines, but result rather from either lower real income growth or lower interest rate growth, as one would expect from estimates of the long-run demand function for money.

The shorter-run movements in velocity within the cycle are less predictable. Average rates of velocity growth during each of the 2 successive years following a business cycle trough are shown in the first column of

Table 3. The changes in velocity within cycles are less systematically related to income and interest rate changes. On the other hand, some of the variations in velocity movements within cycles are consistent with lags or delays in the adjustment of actual money balances to their desired level. Thus velocity grows rapidly when income grows rapidly or money growth slows abruptly, while its rate of advance is more moderate when changes in income and money growth are smaller.

Nevertheless such explanations do not account for all of the observed short-term variations in velocity, and the unexplained variation makes it difficult to predict short-term movements with a high degree of reliability. It is therefore not easy to interpret the rapid rate of velocity growth in the last 2 quarters of 1975, when M_1 velocity grew by annual rates of 12.4 and 9.6 percent respectively. Only in the comparable stage of the recovery from the 1949 recession, a period which includes the beginning of the Korean war, did velocity expand more rapidly.

The important question is whether these recent high rates of growth can be taken to mean that velocity will grow faster on average in the future than it has in the past. One answer is that they are random events that are unlikely to repeat themselves in the near future, but such an interpretation doubtless goes too far. Part of the rapid increase in velocity may derive from the incomplete adjustment of money balances to the sharp acceleration in income in the second half of 1975. However, that explanation would suggest slower growth of velocity in the future as money balances are adjusted to the higher rate of income growth.

TABLE 3.—*Growth rates of velocity of money, real gross national product, and interest rates, selected periods, 1948 IV–1973 IV*

[Percent change; annual rate]

Period	Growth rate of velocity after cyclical trough [1]	Complete cycle, peak to peak [1]	Peak-to-peak growth rate		
			Velocity of money (M_1)	Real GNP	3-month Treasury bill rate [2]
1949 IV to 1950 IV	14.2	1948 IV to 1953 II	4.3	5.3	16.4
1950 IV to 1951 IV	5.2				
1954 III to 1955 III	6.8	1953 II to 1957 III	3.1	2.2	11.0
1955 III to 1956 III	3.7				
1958 II to 1959 II	6.6	1957 III to 1960 II	3.0	2.7	10.9
1959 II to 1960 II	4.1				
1961 I to 1962 I	5.8	1960 II to 1969 IV	2.7	4.1	5.7
1962 I to 1963 I	3.1				
1970 IV to 1971 IV [3]	2.8	1969 IV to 1973 IV [3]	2.4	3.6	3.4
1971 IV to 1972 IV	3.7				

[1] Except as noted, quarters designated as cyclical trough or cyclical peak by National Bureau of Economic Research (NBER) were used in computing growth rates for velocity of money and real GNP. Specific peaks of the Treasury bill rate were used in computing its growth rates. These peaks are 1949 II, 1953 II, 1957 III, 1959 IV, 1969 IV, and 1973 III.

[2] Market yield.

[3] Trough and peak quarters of real GNP (1970 IV and 1973 IV, respectively) used as NBER has not designated these quarters as cyclical trough or peak quarters.

Sources: Board of Governors of the Federal Reserve System, Department of Commerce, Department of the Treasury, Council of Economic Advisers, and National Bureau of Economic Research.

Another explanation for the recent rapid increases in velocity is that the demand for M_1 has shifted down. This interpretation is consistent with recent financial innovations which may have increased the efficiency of the payments mechanism and made savings deposits and other near-monies closer substitutes for demand deposits. Those innovations include telephonic transfers from savings to checking accounts; NOW accounts, which are essentially savings accounts on which "checks" can be drawn; the ability of individuals to write "checks" on some so-called money market mutual funds; electronic funds-transfer schemes; and allowing State and local governments and corporations, in November of 1974 and 1975 respectively, to hold savings deposits at member banks.

Another reason advanced for a shift down in the demand for M_1 is the "shock" of the extremely high interest rates in late 1973 and 1974. Because high interest rates made asset holders more aware of the costs of holding idle balances and of the benefits of managing cash more efficiently, they may have permanently reduced the demand for money for given levels of interest rates and income.

These are all plausible explanations for a downward shift in the demand for money. If the demand for money has been reduced, either by technological factors or by changes in the attitudes of asset holders, the result will be to reduce the rate of increase in the money stock that is consistent with any given path of GNP over the coming year. Nevertheless the conclusion that M_1 demand has shifted down should be treated with some caution. Past experience indicates that it is very difficult to identify shifts in the demand for money soon after they are reputed to have begun. At this point, conclusive evidence of a shift is still lacking. Moreover, if the shift is a once-and-for-all shift in the level of M_1 demanded, all that one can say with certainty is that velocity growth will be higher during the transition period. The growth of velocity will not be permanently increased unless the interest and income elasticities of the demand for money are affected, and there is no evidence so far on this point. Perhaps the most that can be said is that past experience suggests a decline in the growth of velocity as the recovery proceeds, though the growth rate may remain for a while at a higher level than before.

Our forecasts of nominal GNP and a growth rate for M_1 of 6¼ percent (the midpoint of the Federal Reserve's range for M_1) imply increases in velocity that are consistent with this conjecture. The implied growth in velocity for the 4 quarters ending with the second quarter of 1976 is 6.9 percent; for the year following it is 5.7 percent.

These rates show a decline in velocity growth in the second 4 quarters which is consistent with the past intracyclical behavior of velocity. The decline is smaller than in previous recoveries, but it can be partly explained by the fact that the forecasted deceleration in nominal income is smaller than the decelerations in income during comparable stages of previous recoveries. On the other hand, the average rates of growth in

velocity in each of the 4 quarters are significantly higher than past relationships would have led one to predict.

Whether or not one concludes that this cycle has brought structural changes in the demand for money in relation to changes in activity levels is clearly crucial in determining the appropriate rate of increase in the money stock. Even if a structural change has occurred, the increase in velocity is unlikely to continue at recent rates, and monetary policy needs to take account of this slowing.

This does not mean that the current ranges of tolerance are inappropriate. It is not possible to say with any assurance what growth rates of money are necessary to allow real GNP to grow by 6–6½ percent from 1975 to 1976. Setting an upper limit on the growth rate, however, should reduce the prospects for a rekindling of inflation. At the same time, the lower limit provides assurance of continued growth in the money supply if the recovery should turn out to be much weaker than expected. In that event it would be very important for money supply growth to be maintained so that interest rates could fall and shore up the recovery. However, interest rates would be unlikely to fall if the lower-than-expected output growth were due to price acceleration.

Hence the ranges of tolerance are useful in both directions. On the one hand they dampen inflationary expectations; on the other they indicate a firm commitment to lend support to the recovery and to make it more durable. This should contribute greatly to more confident and better-informed decision making by the private sector. Clearly, however, the targets must be administered with flexibility, as the Chairman of the Federal Reserve Board has pointed out on several occasions.

WILL CAPITAL REQUIREMENTS FOR THE REMAINDER OF THIS DECADE BE MET?

Apart from the risks to the durability of the recovery described in the preceding sections, there is the possibility that the structure of final demand may remain too consumption-oriented and business fixed investment too weak to permit adequate economic performance during the remainder of the seventies. Capacity bottlenecks were encountered in a number of basic commodities in 1972 and 1973, giving rise to concern that a shortage of capacity may materialize well before we reach an acceptably low level of unemployment. Such a shortage could intensify inflationary pressures in the later stages of recovery, retard long-term economic growth, and make the achievement of environmental and energy goals more difficult.

At first sight the concern with shortages appears misdirected. In an economy in which the prices of all inputs and outputs and the composition of final demand are free to adjust, there is no reason to expect a chronic shortage of any type of productive facility. To be sure, temporary bottlenecks may occur in a dynamic economy because future demands cannot be anticipated perfectly and because there are lags in the adjustment process.

But in time such bottlenecks would be eliminated, as investment shifted toward the most profitable areas of resource application.

In what sense, then, can there be a valid concern with inadequate capital formation? One way of looking at the capital formation issue is to ask whether the investment spending expected under current conditions is likely to be adequate for the attainment of certain longer-term economic and social objectives, such as full employment, greater energy independence, and a cleaner environment.

Even before the 1974–75 recession idled large amounts of productive capacity, investment incentives may have been reduced by some of the factors enumerated below. Several of these factors are related to inflation, and if they recur or persist they may inhibit investment in the present recovery.

1. The before-tax rate of return that business requires to undertake new investments has been driven up by several forces, while actual rates of return, at least on past investments, have lagged behind. Risk premiums have risen to reflect the increased amplitude of macroeconomic disturbances and the greater instability of relative factor and product prices in the last few years. Experiments with wage-price controls have lessened the incentives to invest. Moreover, compliance with changing environmental and safety regulations requires increased investment, creates some uncertainty, and adds to the cost of production. At the same time, despite changes in the corporate tax laws, general price inflation has raised corporate taxes more than in proportion to the before-tax return on fixed capital because inventory profits have boosted the tax base and because the real value of historical-cost depreciation allowances has declined.
2. The increase in debt-equity ratios during recent years has made business more vulnerable to the vicissitudes of the credit market and to unanticipated changes in the rates of inflation and profits. The tax treatment of interest payments as a deductible business expense makes debt financing particularly attractive when inflation premiums are included in interest rates. Nonetheless, debt-equity ratios have probably reached higher levels than firms would like to maintain under present conditions. While unanticipated increases in the rate of inflation have lowered the real cost of amortizing old debt, this gain has not been reflected in a higher valuation of corporate equities in periods of rising inflation. The resulting unfavorable structure of business liabilities may have created some structural financing problems, and it may have increased default risks, the costs of financing, and the cutoff rate of return on new projects.
3. Fiscal policies may have been biased against private investment. In periods like 1973, when the economy was already approaching its capacity limits, government transfer payments continued to increase rapidly. Then, in periods of slack, changes in Federal tax and expendi-

ture policies have emphasized the stimulation of consumption rather than investment. A policy mix that relies more on monetary stimulus than on the types of fiscal stimuli which have predominated in the past may be expected to alter the composition of output in favor of private investment. In recent cycles, however, investment was the last sector to be stimulated by expansionary fiscal policies, and the first to suffer when these policies were maintained too long and led to either more inflation or to offsetting monetary restraint. Cyclical recoveries of investment may therefore have been incomplete, with cumulative effects on the size of the capital stock.

4. The long-term savings incentives of persons may have been reduced through government policies favoring consumption. The scope of government transfer programs and the level of social insurance benefits have increased rapidly in recent years. This development may eventually encourage less reliance on personal savings to protect a future standard of living. Moreover, although firm evidence is not available, incentives to save may also have been reduced because Federal interest rate controls on many types of savings have become more restrictive as a result of inflation and because nominal interest receipts are fully taxed without allowing for inflation. On the other hand, individuals have increased their saving rate in reaction to the diminution of the real value of their financial assets and the greater insecurity about future living standards that the high rates of inflation and unemployment of the past few years have caused. Thus substitution effects which discourage saving may not begin to dominate the actual savings behavior of persons until the income and wealth effects stemming from the most recent inflation and recession have been reduced much further.

AN ESTIMATE OF CAPITAL REQUIREMENTS

The actual business fixed investment that is likely to be forthcoming during the remainder of this decade under the existing structure of tax laws and economic incentives is difficult to forecast. If we had a perfect long-term forecast, we could directly assess the adequacy of the expected investment, provided the investment required to meet certain objectives by a given date could be deduced with a high degree of reliability from these objectives. Since this is not possible, a much more modest approach will be followed in assessing the capital formation issue. This approach involves estimating the capital stock that may be needed to achieve certain goals and then comparing the implied investment requirements with recent trends in the share of investment to GNP. Given the large number of conditions and qualifications that must be attached to any statistical estimate of future input requirements, no such exercise can be conclusive. If this exercise suggests that increased rates of capital formation are desirable, what is called for is not increased Government controls or directives, but in all likelihood a shift in the monetary-

fiscal policy mix and reconsideration of the existing tax laws and incentive structures.

To throw some light on the question of capital adequacy, which has been widely debated during the past year, the Council of Economic Advisers commissioned the Bureau of Economic Analysis of the Department of Commerce to conduct a study of the capital that would be required to achieve a real output level presumed to be consistent with approximately full employment in 1980.* The level of real GNP selected for that year was $1,575 billion in 1972 dollars ($1,078 billion in 1958 dollars). The GNP target implies an average annual growth rate of about 6 percent in real GNP and 4 percent in output per employee in the private sector from 1975 to 1980, a condition which is estimated to move the unemployment rate below 5 percent by the end of the decade. Figures for industry outputs compatible with the specified level of GNP were derived by the Bureau of Labor Statistics of the Department of Labor. They were generally at the 80-industry level of input-output aggregation.

The capital stock necessary to produce the output levels specified for 1980 is assumed to include facilities to meet certain environmental standards currently in effect, and to allow the greater degree of energy independence which has been advocated by the Federal Government. Estimates were prepared of the investment in pollution control facilities necessary to meet the requirements of the Clean Air Amendments of 1970 and the Federal Pollution Act Amendments of 1972. Furthermore, an attempt was made to estimate the additional investment required in the mining of coal, crude petroleum, and natural gas, and in electric utilities using fuels other than oil and gas, to prevent the 1980 share of imported crude and refined petroleum products from exceeding its 1973–74 level of 36 percent of total domestic consumption (in barrels per day). This percentage would otherwise rise to 47 percent under the "business as usual" scenario in the *Project Independence Report* of the Federal Energy Administration. All of these estimates may be subject to errors which could bias in either direction the estimate of total investment requirements.

Many assumptions must be made before gross investment requirements can be arrived at from the output targets. Capital services need not normally be used in fixed proportions with other factors of production to obtain a given level of output, first because there are possibilities for factor substitution over time, and then because there are distinct trends in factor proportions associated with changes in technology within particular industries, which may or may not continue. To narrow the range of possible estimates for 1980, links between industry outputs and capital stocks were established by assuming either that the adjusted capital-output ratios remain constant at

* The full study is available from the Bureau of Economic Analysis. The basic estimates were developed in the summer and fall of 1975 and do not reflect the benchmark revisions of the national income accounts and the economic assumptions and projections published in the 1977 budget. The differences, however, are relatively small.

their 1970 levels or that observed trend rates of growth or decline in such ratios persist. The extrapolations are based on annual capital-output ratios available for 1963 and for each year from 1967 through 1970, which are adjusted to normal operating conditions by dividing actual industry output by the ratio of the actual utilization rate to the preferred utilization rate. If the adjusted capital-output ratios have shown a consistent tendency to grow or to decline over this period, the annual trend rates of change estimated from either 1963 or 1967 were generally continued from 1970 to 1980.*

Finally, it is necessary to specify a discard pattern (i.e., a pattern of retirements and other deletions from the capital stock) to estimate the amount of gross investment that would produce the net additions to the capital stock obtained in the previous step. For those industries whose 1970 capacity utilization rate was 100 percent, discards are assumed to grow at the same rate as the adjusted capital stock from 1970 to 1980. In industries whose capacity was not fully utilized, discards are assumed to grow faster, on the assumption that more obsolete capacity will be eliminated through replacement investment before full capacity operations are approached by all industries simultaneously in 1980. The discard rate is also assumed to rise in gas utilities (including gas pipelines) as a result of rapid shifts in the location of producing wells.

Since so many specifications and data adjustments are necessary to obtain numerical estimates of capital requirements, these estimates are not definitive. Their usefulness depends on the descriptive realism of the assumptions employed in deriving them. These include the degree of labor force utilization and the composition of output and final demand in 1980, as well as the links from specified output targets to capital "requirements" and the link from "required" capital to investment. The data on capital stocks and discards by industry are weak. Moreover a number of unspecified economic assumptions have to be made to ensure that the implied accumulation process is consistent with a movement toward economic equilibrium and stable real rates of return.

The results are highly sensitive to changes in the output mix—for instance, between manufacturing and other more capital-intensive sectors such as agriculture, mining, transportation, communication, and utilities. The direct and indirect capital requirement per dollar of output from petroleum and natural gas mining, for example, is about four times as high as the corresponding coefficient for manufacturing. Estimates of capital requirements are less sensitive to shifts between broad end-use categories like consumption and business fixed investment than to shifts between particular output sectors, but the composition of final demand still matters. For instance, the capital required per dollar of final demand is 22 percent greater for personal consumption than for private fixed investment.

*One of the most significant exceptions is the electric utilities industry, in which the past trend of rising capital-output ratios was not projected to continue in the absence of "Project Independence" objectives.

Subject to all these qualifications, certain conclusions can be drawn from the estimates reported in Table 4. The table shows that a share of business fixed investment in GNP as low as 9.9 percent in 1971–80 is estimated to be compatible with the output level specified for 1980, if capital-output ratios remain at their 1970 level and the energy and pollution abatement goals previously specified are left out of account. Hence, without the additional requirements attributable to changing technology and to government policies, the share of business fixed investment in GNP could actually be lower than the 10.4 percent that prevailed during the period from 1965 through 1970. This result is obtained in spite of a slight acceleration in the actual and projected annual rates of discards (from around 4.6 percent of the capital stock in 1965–70 to 4.8 percent in 1972–74 and 4.9 percent in 1980), because it is estimated that the changing industrial composition of GNP reduces the cumulative investment required.

However, the ratio of required investment to GNP would be lifted from 9.9 to 11.4 percent in 1971–80, and cumulative investment would have to rise 15 percent more than previously estimated, if the legal, technological, and energy-related factors that raise investment requirements in the current decade are to be allowed for. Together these additional requirements add $190 billion in 1972 dollars to the cumulative investment total for the decade 1971–80.

TABLE 4.—*Share of business fixed investment in gross national product: historical data and projected requirement, selected periods, 1965–80*

Item	1965–70	1971–74	1975–80	1971–80
	Billions of 1972 dollars			
Cumulative gross national product (GNP):				
Actual	5,999.3	4,674.5		
Projected			[1] 8,254.6	12,929.1
Cumulative business fixed investment:				
Actual	623.4	486.8		
Projected capital-output (c/o) ratios			[3] 986.6	1,473.4
Fixed 1970 c/o ratios:				
Actual law [2]			[3] 844.5	1,331.3
Pre-1970 law [2]			[3] 796.6	1,283.4
	Percent			
Business fixed investment as percent of GNP:				
Actual	10.4	10.4		
Projected c/o ratios			12.0	11.4
Fixed 1970 c/o ratios:				
Actual law [2]			10.2	10.3
Pre-1970 law [2]			9.7	9.9

[1] Derived from GNP projections in 1958 dollars provided by the Department of Labor, Division of Economic Growth.
[2] "Actual Law" contains pollution control expenditures pursuant to the 1970 Clean Air Amendments and to the 1972 Federal Water Pollution Act Amendments, while "Pre-1970 Law" does not contain these expenditures.
[3] Derived by subtracting actual investment in 1971–74 from the estimate of investment required during 1971–80.

Note.—The 1965–74 data in this table have not been revised to the new benchmark data used elsewhere in this Report since the projections were made before the new data were available. However, using the new data, business fixed investment as percent of GNP would have been the same for 1965–70 as shown in the table (10.4 percent) and slightly lower for 1971–74 (10.2 percent instead of 10.4 percent).

Sources: Department of Commerce (Bureau of Economic Analysis) and Department of Labor (Division of Economic Growth).

TABLE 5.—*Factors affecting the cumulative total business fixed investment required from 1971 through 1980, by major industries*

[Billions of 1972 dollars]

Factor	Total	Agriculture, forestry, and fisheries	Mining	Construction	Manufacturing	Transportation	Communication	Electric, gas, water, and sanitary services [1]	Services [2]	Other [3]
Fixed 1970 capital-output (c/o) ratios, pollution control requirements limited to pre-1970 law	1,283.4	68.5	48.5	29.5	292.2	134.7	101.1	209.5	173.8	225.7
Add for actual Pollution Control Laws passed in 1970 and 1972	47.8	.....	.9	.5	29.5	.6	.0	14.2	.3	1.8
Add for industries with c/o ratios increasing for reasons other than the achievement of greater energy independence	118.2	10.3	4.2	.0	35.3	5.3	.4	.4	62.4	.0
Add for industries with decreasing c/o ratios	−36.0	−.0	−21.8	−.0	−13.2	−.0	−.0	[4] −1.0	−.0	−.0
Add for additional capital required for greater energy independence	57.9	.0	49.0	.0	.0	.0	.0	8.9	.0	.0
Add for increase in pollution control investment induced by additional investment in energy	2.0	.0	.4	.0	[5] .2	.0	.0	1.3	.0	.0
Total business fixed investment required	1,473.4	78.8	81.2	30.0	344.0	140.6	101.4	233.3	236.5	227.5

[1] Includes production by both public and private enterprises.
[2] Consists of hotels and lodging places, personal and repair services, business services, automobile repair and services, amusements and medical, educational services and nonprofit organizations.
[3] Consists of wholesale and retail trade and finance, insurance and real estate.
[4] Increase in discard rate in gas utilities due to energy considerations would produce this decline unless offset by $1.0 billion higher investment required for greater energy independence.
[5] Although the outputs and capital-output ratios of petroleum refining and related industries are not assumed to change in the process of achieving greater energy independence, the substitution of lower-grade domestic crude for higher-grade imported crude causes some additional pollution control expenditures in petroleum refining.

Note.—Detail may not add to totals because of rounding.

Source: Department of Commerce, Bureau of Economic Analysis.

As shown in Table 5, there are three major reasons for the need to devote an increased share of GNP to fixed investment:

1. Investment in pollution abatement equipment as a consequence of legislation relating to "clean air" and "clean water" is estimated to add about $48 billion (1972 dollars) to the base level 1971–80 investment total. This base level, which is estimated on the assumption of fixed capital-output ratios in all industries, is identified as "pre-1970 law" in Table 4. Less than half of this additional requirement is believed to have been met by 1975.

597-578 O - 76 - 4

2. Changing technology in selected industries, such as agriculture, ferrous mining and nonferrous metals manufacturing, communication equipment manufacturing, transportation, business services, and auto repair, in all of which capital-output ratios have been increasing, is estimated to add about $118 billion to the cumulative investment required from 1971 to 1980, while industries with declining capital-output ratios subtract about $36 billion.
3. To meet the goal of greater energy independence, increased investment in petroleum mining, electric utilities, and other energy-related industries is required. This is estimated to add about $58 billion to the 1971–80 investment total. Another $2 billion is required for the induced increase in pollution control expenditures by energy-producing or processing industries. If the decline in the capital-output ratio of petroleum mining continues, the cumulative investment could be $21.8 billion less. Any further decline in capital-output ratios in petroleum mining, however, would be inconsistent with the assumption of increased domestic energy output.

INFERENCES

Although these estimates are by no means definitive, they do allow some cautious inferences. Because the ratio of business fixed investment to GNP in 1971–74 continued at the 10.4 percent level that prevailed from 1965 to 1970, the business fixed investment to GNP ratio may have to average 12 percent from 1975 to 1980 to meet the capital requirements projected for 1980. Since investment is expected to amount to less than 10 percent of GNP in 1975–76, these estimates suggest that investment ratios even higher than 12 percent may be necessary in the next 4 years to put enough capital in place by the end of 1980 to meet the goals previously stipulated.

If ratios of fixed investment to GNP substantially in excess of 10 percent are unattainable, full employment cannot be achieved by 1980 at capital-output ratios and productivity growth rates as high as those projected with the assumption that the environmental and energy goals are to be met. Whether full employment can be achieved at all by 1980 under these conditions depends first, of course, on the reliability of the previous estimates, and then on the ease of input substitution and on the flexibility of relative factor prices. If the estimated capital requirements are not met, the 1980 output level could be lower than projected, owing to lower productivity or lower employment, or both. Alternatively, goals concerning pollution control and energy independence might have to be scaled down. Either of these possibilities seems far less desirable than providing incentives to raise the share of investment in GNP.

To achieve this goal, increased savings incentives may have to supplement increased investment incentives once the economy's resources are utilized more fully. Whether an increased saving rate may be required, however, depends not only on the potential demands for business investment but also on the demands for residential construction and net foreign investment.

Furthermore there may be no need to maintain higher business fixed investment to GNP ratios than in previous periods of high employment beyond 1980, because the required additions to capacity are bound to decline sharply if output growth falls to its long-term sustainable level and no new policy initiatives are developed that would require extra investments in areas such as energy, safety, or the environment beyond 1980.

At the present time macroeconomic policies that continue to stimulate the economy to a fuller utilization of its resources will also encourage investment. But, for reasons indicated above, a steady and sustained expansion will provide a far better economic climate for investment than a path of excessive expansion followed by another cycle of inflation and recession. Moreover a policy mix that relies less on consumption-oriented fiscal expansion and more on monetary stimulus would be more conducive to high rates of private investment. During the initial phases of the recovery a slower rate of increase in Federal outlays and a reduction in the budget deficit would permit a more expansionary monetary policy to be carried out with less risk of inflationary pressures. Such a policy mix would tend to shift the composition of output toward investment. If Government deficits do not decline rapidly enough as the recovery proceeds, the savings necessary to ensure a satisfactory rate of private investment may be preempted, and the expansion could stall some time before employment returns to an acceptable level. The President's program of reducing the growth in Federal outlays in this and in coming years is designed, among its other goals, to avoid such an impasse.