CHAPTER 3

Longer-Term Policies for Stability and Growth

THE CONTROL AND REDUCTION OF INFLATION is the Nation's highest economic priority, requiring fiscal and monetary policies that restrain demand not only in the immediate future but over an extended period. We also need policies to improve the structure and functioning of the economy in order to increase the effectiveness of demand restraint in lowering inflation and to reduce its depressing influence on output and employment. Such supply and structural policies are also important because they address two other tasks facing the American economy: restoring the Nation's productivity growth and making the necessary adjustments to scarce energy supplies.

The first part of this chapter outlines the broad framework of aggregate demand restraint consistent with a sustained attack on inflation and touches briefly on the strengths and limitations of this means of controlling inflation over the long run. The bulk of the chapter is devoted to a discussion of supply and structural problems. It examines how productivity and output are affected by the pace of business investment and by measures to reform regulatory policies, improve the operation of labor markets, promote energy conservation, and expand energy supplies. It also discusses ways to reduce the economy's vulnerability to inflationary shocks in the areas of energy and food.

THE NEED TO REDUCE INFLATION

As Chapter 2 emphasized, the most immediate goal of anti-inflation policy must be to prevent the recent price increases for energy and housing from spilling over into the rest of the economy. Success in that endeavor will still leave the country's inflation rate far too high. On the basis of measures of inflation in sectors other than energy and housing, and taking account of longer-term trends in unit labor costs, the underlying inflation rate currently appears to be in the neighborhood of 8 to 9 percent.

Each new round of inflation since the mid-1960s has left us with a higher underlying inflation rate. Without long-term policies to reduce the current underlying rate of 8 to 9 percent, the economy will remain vulnerable to still further increases. These could come from a variety of sources. Another sharp increase in oil prices or a worldwide crop shortage could be the impetus for the next turn of the ratchet. A sudden and unanticipated surge in private spending could temporarily overheat the economy and spur inflation. Moreover, failure to lower inflation significantly after the latest inflationary episode would strengthen long-run inflationary expectations and erode resistance to future wage and price increases. Over the longer term, therefore, we must either have policies in place to reduce the underlying rate of inflation or in all likelihood face worsening inflation.

Successfully unwinding inflation over the coming years will require policies that address each of its three major long-run determinants: the rate of growth of nominal wages, profits, and other income; the pace at which productivity advances; and the occurrence of outside inflationary events. First, the rise in hourly wages and other income has to be reduced in order to bring down the rate at which costs are rising. While the task of economic policy at the moment—after a year of substantial increase in energy and housing prices—is to prevent the acceleration of wages and other costs, the longer-run objective of substantially reducing inflation can only be achieved by decreasing the rate of growth in nominal incomes. Second, curbing the rise of unit costs also requires that the rate of productivity growth be improved. For the economy as a whole, short-run changes in the rate of productivity growth do not seem to affect the growth of money wages, which depends principally on the state of aggregate demand and the momentum of past inflation. As a consequence, measures that improve efficiency and speed up productivity growth not only raise real living standards but retard the growth of unit labor costs and thus lower the underlying rate of inflation. The dismal productivity performance of the American economy in recent years calls urgently for improvement. Much of the rise in unit labor costs over the past several years appears to derive not from an acceleration of wage increases, but from the fall in productivity growth.

Finally, the Nation must improve its ability to cope with such shocks as worldwide crop shortages or sudden increases in the world price of oil. These periodic events, whose effects have been especially severe in the past decade, do not cause merely temporary spurts in inflation. They do more permanent damage through the formal indexing and informal mechanisms that many groups in society resort to in an attempt to raise their money incomes and escape the burden of the initial price shocks. If widespread, these mechanisms cannot

make up for the loss in real income, but they do raise the underlying rate of inflation.

CONTROLLING AGGREGATE DEMAND

The President's budget for 1981 calls for increased fiscal restraint. Chapter 2 estimates the degree of restraint and explains the necessity for using the budget as an anti-inflation tool, even in a period of weakening economic growth.

The specific fiscal and monetary policies needed to reduce inflation will necessarily vary from year to year, depending principally upon the strength or weakness of the private economy and the actual course of inflation and unemployment. Nevertheless some broad principles can be laid down to guide fiscal and monetary policy toward a long-term reduction in the underlying rate of inflation.

Reducing the Growth of Nominal GNP

While monetary and fiscal policies can to some extent directly affect the rate of inflation through their impact on inflationary expectations, their principal influence comes indirectly through their effect on the growth of total spending, or nominal gross national product (GNP). If inflation is to be reduced over the long run, the growth of nominal GNP must decline. At one level this is simply an arithmetic truism. The growth rate of nominal GNP approximately equals the rate of growth of real output plus the rate of inflation. If real output increases by 3 percent and prices rise by 10 percent, nominal GNP will thus increase by about 13 percent. A long-term reduction in the rate of inflation in an economy growing at or close to its potential rate necessarily implies a decline in the growth rate of nominal GNP.

But the proposition is more than a truism. Because there is a momentum to inherited inflation, this year's underlying rate of wage and price increase is likely to perpetuate itself next year unless other forces counteract it. In the absence of significant economic slack, therefore, monetary and fiscal policies which aim at a continuation of last year's rate of growth in nominal GNP are likely to perpetuate last year's underlying rate of inflation. Indeed, failure to resist such perpetuation of inflation may arouse inflationary expectations and thereby produce a further increase in inflation—particularly after the economy has been shocked by soaring energy prices. On the other hand, if monetary and fiscal policies reduce the growth of nominal GNP, the persistence of wage and price increases at undiminished rates would necessarily lessen the growth of output and create more idle capacity and unemployment. Increased economic slack generates greater resistance to wage and price increases; and the degree to which wage and price increases respond determines the division of

reduced growth in nominal GNP between a reduction in output and a decline in the inflation rate.

Unfortunately, as the 1979 *Economic Report of the President* discussed at length, the overall rate of wage and price increases in the American economy, while not immune to the effects of idle capacity and unemployment, is not highly sensitive to moderate changes in economic slack. Using monetary and fiscal policies to produce a very sharp and immediate reduction in the growth of nominal GNP in the hope of reducing inflation quickly by a large amount would almost surely fail. It would produce a large decline in output and employment and only a modest reduction in the underlying rate of inflation. In such circumstances the political consensus needed to continue policies of restraint on aggregate demand would be short lived. The most appropriate course is likely to be monetary and fiscal restraint that aims for a long-term decline in the growth of nominal GNP and produces a gradual but steady lowering of inflation. Persistence in this endeavor, moreover, would improve the expectations about future inflation, and as a result prices and wages might respond more readily to economic slack than they have in the past.

In the context of such monetary and fiscal policies, standards for moderation in setting wages and prices become a means not only of reducing inflation but also of increasing jobs and output. If the pay and price standards succeed this year in stabilizing the underlying rate of inflation, they can be directed in later years to the more difficult task of reducing that rate. Over the longer term the challenge is to develop standards and approaches that are sufficiently specific to be self-administered by most employers and employee groups, but flexible enough to avoid rigidity and misallocation of resources. The National Accord between labor leadership and the Administration provides a framework for developing such standards.

Similarly, in the context of a long-run aggregate demand policy dedicated to reducing inflation, the supply and structural policies discussed later in the chapter also take on a new meaning. Many of these measures are designed to speed up the rate of productivity growth. To the extent that they succeed, the growth of output is likely to be higher for any given reduction in the growth of nominal GNP. Moreover an increase in the long-term rate of productivity growth raises the potential growth rate, and thus output can rise more rapidly without putting any greater demand pressure on product or labor markets. As a consequence, a lesser degree of monetary and fiscal restraint is needed to produce a decline in the inflation rate. Policies that improve supply thus make possible an eventual relaxation of the monetary and fiscal constraints on the growth of aggregate demand without endangering the effort to reduce inflation.

Some General Principles

The general principles that must guide economic policies designed to reduce the inherited underlying rate of inflation over the long run can be summarized in four propositions: (1) The rate of inflation can be reduced only if fiscal and monetary policies over the long term aim at lowering the rate of growth of nominal GNP. (2) Because of the momentum of underlying inflation, such restraint in fiscal and monetary policies will operate to retard output and employment somewhat, compared to what might have been achieved in a noninflationary economy. (3) Greater moderation in wage and price decisions by business and labor will result in correspondingly smaller losses in output and employment growth as growth in nominal GNP falls. (4) Measures that successfully increase the Nation's efficiency in using its human and capital resources not only directly reduce inflation but also improve standards of living and make possible some relaxation of fiscal and monetary restraint, thereby promoting a faster growth in national output and employment.

The goal of a long-term reduction in the nominal growth of GNP still leaves room for adapting fiscal and monetary policy to shorter-run changes in economic conditions. In the first place the objective of a long-term decline in nominal GNP growth has to allow for some year-to-year variations. In 1980, for example, real output is expected to decline, while subsequent recovery would raise GNP growth moderately above potential for a time. Anti-inflation policy this year will be successful if it does no more than stabilize the rate of underlying inflation after a series of huge oil price increases. Substantial reductions in inflation must come later. Taking all of these factors into account, the maintenance of an overall framework of monetary and fiscal restraint during the next several years is likely to be consistent with a growth of nominal GNP that declines substantially in 1980 and then rises in 1981 and 1982.

Furthermore any given growth of nominal GNP might require more or less restraint from monetary or fiscal policy, depending upon the strength of private demand. When the growth of private spending promises to be very strong, aggregate demand should be further restrained to prevent nominal GNP from growing too rapidly. When private demand is very weak, the desired growth in nominal GNP may require more expansive policies. The long-term reduction of inflation does not mean that fiscal and monetary policy must be locked into a fixed position. But it does require adjustments around an average degree of demand restraint that produces declining inflation over the long run and is therefore greater than would be appropriate in less inflationary times.

In one respect the necessities of the long-term fight against inflation have a very particular implication for the way in which specific decisions ought to be made about short-run adjustments of monetary and fiscal policies. Monetary and fiscal policies exert their effects on the economy only after some time. Hence they must be based on economic forecasts, which are often in error; makers of economic policy must take this fact into account. A world in which the momentum of past inflation is very strong and in which inflationary expectations are easily aroused produces asymmetric risks. If expansive monetary or fiscal actions are undertaken on the basis of an erroneous forecast that economic activity will weaken, the underlying inflation rate may well worsen for many years to come. On the other hand, if expansive actions are forgone because of a mistakenly optimistic forecast, the resulting unexpected declines in output and employment, while still costly, can be remedied more surely and quickly than if the error had been in the other direction.

These considerations do not warrant a rigid and unbending policy, but they do indicate the need for continuing prudence and caution in monetary and fiscal decisions. To be acceptable, the case for relaxing monetary and fiscal restraint now and in the near future will have to be more urgent and much clearer than it was in earlier and less inflationary periods.

As events of the past decade have made painfully clear, monetary and fiscal policy must be prepared to cope with sudden inflationary forces arising from events like a worldwide crop shortage or a large increase in world oil prices. Such supply shocks have two inflationary effects. First, they directly increase prices of the affected commodities; second, they threaten to induce larger wage increases and efforts to restore profit margins which generate higher prices throughout the economy.

If, before the supply shock, monetary and fiscal policies were set to produce a decline in the growth of nominal GNP and in the rate of inflation, how should they now be adjusted? To suppress even the direct inflationary consequences of an abrupt increase in food or oil prices, fiscal and monetary policy would have to be sufficiently tightened that the reduction in price and wage inflation outside the affected sector would offset the price shock within the sector. But given the relative insensitivity of wages and prices to economic slack, such a policy would lead to unacceptably severe reductions in output and employment. On the other hand, an effort to avoid any loss in output and employment from the supply shock would require supporting aggregate demand to the point where no resistance would be offered to the wage-price spiral triggered by the price shock. Such a policy would raise the underlying rate of inflation, setting back for many

years the long-term goal of reducing inflation. A practical alternative would be to accommodate the direct inflationary effects of the shock but, through a combination of monetary and fiscal policies and wage-price guidelines, to seek to stabilize the rate of wage and price increase elsewhere in the economy. Thus monetary and fiscal policy would recognize the inevitability of a temporary addition to inflation but would fight vigorously any tendencies to increase the underlying rate. Such a policy would lead to some temporary loss of output. But the direct inflationary effects of the supply shock would gradually disappear and the economic slack would itself moderate the indirect effects. At some cost, the economy could absorb the supply shock and return to its previous path of increasing output and declining inflation.

Finally, one must be clear about measuring restraint in fiscal policy. This Administration has committed itself to reducing the share of Federal spending in GNP. At the same time, however, in the absence of tax cuts the progressivity of the tax system generates Federal revenues that grow faster than GNP, producing increasing fiscal restraint. (Table 12 estimates the growth of fiscal drag in 1979 and 1980.) Tax reductions become necessary at times to prevent excessive fiscal restraint and need not in themselves be inconsistent with a general policy of fiscal restraint. However, the timing and magnitude of such reductions must be decided on the basis of prevailing and expected economic conditions. Tax reductions at the appropriate time could be quite consistent with the maintenance of restraint; taken prematurely, they could induce an excessive growth in nominal GNP and thus thwart the achievement of long-run anti-inflation objectives. Proper timing for tax reductions must also take into account the asymmetry of risks discussed on the previous page. The President's budget for 1981 was drawn up in accordance with these considerations.

IMPROVING THE STRUCTURAL PERFORMANCE OF THE ECONOMY

While a long-term strategy of restraint on the growth of aggregate demand is essential in bringing down the underlying rate of inflation, it cannot accomplish the task by itself without serious costs in the form of reduced growth in real incomes. Over the longer run there is simply no alternative to increasing the efficiency with which the economy produces goods and services. "Supply-side" policies to achieve this end fall into two general categories: those that improve the productivity of human and capital resources and those that help insulate the economy from the price-increasing effects of supply shocks.

Supply-side policies do not produce quick and dramatic results. They operate slowly and sometimes only after a considerable lag. But unless we successfully pursue them, we cannot achieve the high rates of economic growth, stable prices, and full employment set forth as goals in the Humphrey-Hawkins Act.

MEETING THE ENERGY CHALLENGE

The immediate economic consequences of the sharp rise in world oil prices in 1979 have focused attention on the short-term effects of tighter energy supplies. Developments over the last year have a deeper significance, however. They confirm that rising energy prices are not a transient phenomenon, but something the Nation must adjust to. This adjustment will place a significant burden on the economy, but it cannot be avoided. Attempts to do so will damage the Nation's growth prospects and its competitiveness in the world economy.

Over the long run and with proper policies the United States can make a successful transition to a world of higher energy prices. With energy conservation and the timely development of alternative energy supplies, growth in output and improvements in our living standards need be only modestly reduced by the relative scarcity of energy supplies. The task of energy policy is twofold: to promote over the long run an efficient and orderly adjustment to a world of scarcer and more costly energy supplies, and in the interim to reduce the Nation's vulnerability to the transitional economic costs of sudden increases in oil prices and disruptions in supply.

REDUCING VULNERABILITY IN THE SHORT RUN

Over the longer term the Administration's energy program will accomplish substantial reductions in oil imports. In the short run, however, the Nation's dependence on imported oil is likely to remain uncomfortably high. The President has pledged that the United States will never again import more oil than it did during 1977: a net of 8.5 million barrels per day. During 1979 both imports and oil consumption fell considerably because of a number of factors, including physical shortages in the spring, conservation induced by the sharp increases in energy prices, and policies to promote conservation and conversion to non-oil energy sources. A continuing decline in domestic demand for petroleum products is forecast for 1980. However, uncertainty about further sharp price increases and supply disruptions keep the balance between supply and demand in the world oil market precarious. Measures to limit the Nation's vulnerability over the shorter term are therefore necessary.

The most effective means of moderating the impact of supply disruptions is to change the conditions which permit large and sudden price increases. To the extent that world demand for oil can be reduced, the price-raising pressures of demand against supply will be relieved. Similarly by developing a mechanism for responding to any cutbacks in oil supply with a coordinated reduction in demand, the major oil-consuming countries, acting together, can reduce the competitive scramble for oil and thus lessen the bidding up of prices in the spot market. High spot market prices would encourage further official price increases by the Organization of Petroleum Exporting Countries (OPEC). Chapter 4 discusses the efforts now under way by the United States and other major oil-consuming countries in the International Energy Agency to achieve these very important objectives.

While international cooperation is essential, so are national measures. The Strategic Petroleum Reserve (SPR) is intended to cushion the impact of any abrupt cutoff in supply. Purchases for the SPR were halted last year at the onset of the Iranian crisis. In August 1979 the reserve contained 92 million barrels—far short of its target. If conditions permit during the year ahead, SPR purchases could resume. An adequate Strategic Petroleum Reserve, combined with private stocks, will provide considerable protection for the United States against supply interruptions. The SPR will also buy time for other responses to disruptions, such as mandatory conservation measures, to be put in place.

Finally, we also need to have measures in readiness so that if a severe disruption occurs available supplies will be distributed both fairly and efficiently. While the price system is likely to be the most efficient (and in some respects the fairest) way of handling minor interruptions in supply, it should not be relied on as the sole remedy for interruptions of all magnitudes. In response to recent legislation the Administration is developing a standby motor fuel rationing plan for submission to the Congress. Under that legislation the rationing plan may be put into effect in situations where the shortfall in gasoline, diesel fuel, and heating oil supplies is expected to exceed 20 percent for more than 30 days. (Using 1979 figures, this shortfall would amount to approximately 2 million barrels per day.) A notable feature of the plan is a "white market" for trading unused ration coupons. All motorists would be assured a certain minimum supply of fuel, but those wishing more would be free to purchase it—at market-clearing prices.

The Nation must also be capable of dealing with smaller supply disruptions. As we learned this past year, even cutoffs of less than 10 percent of supply can significantly disrupt normal activity, and hence

the Administration is preparing proposals for standby measures to be applied when smaller disruptions occur.

LONGER-TERM IMPROVEMENTS

A key aim in the Administration's energy program is to move as quickly as feasible to a rational pricing policy for energy. Price controls are being removed from domestic oil and natural gas so that the market can direct efficient use of energy and encourage the production of additional supplies.

Unfortunately, reliance on the market will not be enough. Habits of energy consumption learned over decades of falling real energy prices are difficult to change. Furthermore the benefits to our national and economic security from reducing our dependence on foreign oil exceed even the high price we must now pay for this oil. For both of these reasons there is room for measures that mandate additional energy conservation and encourage investment in new sources of energy.

Gradual Decontrol of Domestic Natural Gas and Crude Oil Prices

The 1978 enactment of the Administration's proposal for deregulation of natural gas began what is to be a gradual decontrol of gas prices. The initial steps toward decontrol have already been beneficial. The decline in yearly additions to reserves has been halted, and natural gas previously confined to intrastate channels can now enter the interstate market. Price flexibility is also helping to redirect supplies to relatively more valuable uses.

In April 1979 the President announced that he would phase out price controls on domestically produced oil. Decontrol began on June 1 with the release of controls on the price of newly discovered oil (oil discovered since January 1, 1979). At that same time 80 percent of all "marginal" oil (oil produced from wells of various depths yielding 10 to 35 barrels per day) was allowed to be sold at a substantially higher (but still controlled) price. In August the President announced the immediate decontrol of "heavy" crude oil, an extremely viscous oil produced mainly in California. In December the definition of heavy oil was broadened slightly, exempting still more oil from controls. These initial decontrol steps had little impact on the economy, however, because they affected a relatively small proportion of the domestically produced oil.

In January 1980 the pace of decontrol accelerated as the price of most domestically produced oil began to move steadily toward the world price. Decontrol is scheduled to be completed by October 1, 1981.

Decontrol of domestic crude oil prices will provide strong, unambiguous signals encouraging conservation and stimulating do-

mestic energy supplies. According to recent estimates by the Department of Energy and the Congressional Budget Office, by 1990 decontrol will result in U.S. oil imports being at least 2 million barrels per day lower than they would be otherwise.

The Effect of Higher Prices on Oil Consumption

Some continue to doubt that higher energy prices significantly reduce energy demand. Because the elasticity of demand for most petroleum products is somewhat smaller than that for other familiar commodities, and is less than unity, economists have called the demand for petroleum products inelastic. This fact, combined with a widespread belief that use of energy in general and gasoline in particular is essential, has led to the erroneous conclusion that price would have no impact on demand. However, economists who have studied the question have almost invariably found statistical evidence that gasoline demand is indeed responsive to price. In the majority of studies, estimated short-run (1-year) price elasticities of demand for gasoline range between minus 0.2 and minus 0.4. (Thus a 10 percent rise in price will lead to a reduction of 2 to 4 percent in consumption.) Longer-run (5-year) elasticities are significantly higher, generally between minus 0.6 and minus 0.8.

Even before the dramatic price rise of last year there were signs that the price of energy was cutting into demand. Table 20 shows that after the 1973 oil embargo the growth in per capita gasoline consumption was much slower than in the years immediately preceding it, even though real per capita income rose at approximately the same rate during the two periods. While this finding is partly explained by improvements in the fuel efficiency of automobiles, there was also a sharp reduction in automobile use. By the end of 1978 the average miles traveled per car was slightly below the 1972 average. If trends before the embargo had continued, the 1978 figure would have been 10 percent higher.

Of course, gasoline is not the only energy source whose demand is influenced by price. The final item in Table 20 shows that increases in total per capita energy use slowed dramatically after the 1973 embargo. If the trends of the preceding 6 years had continued, total 1978 use would have been 16 percent higher—the equivalent of nearly 6 million barrels of oil per day.

During 1979 additional evidence accumulated that energy demand is responsive to price. Preliminary estimates indicate that demand for all petroleum products (as measured by disappearances from primary stocks) fell by 4.2 percent between the fourth quarter of 1978 and the fourth quarter of 1979. Demand for gasoline fell by 9.3 percent. Preliminary estimates also suggest that miles traveled per car dropped about 5 percent from 1978 levels. Although waiting in line

TABLE 20.—*Gasoline consumption and energy use, 1966–78*

[Percent change]

Item	1966 to 1972	1972 to 1978
Real per capita income	17	15
Real gasoline price	−12	21
Per capita gasoline consumption	25	11
Per capita total energy use	21	5

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

for gasoline surely contributed to these dramatic reductions, there is no doubt that sharply higher prices were a primary factor.

Side Effects of Crude Oil Decontrol: Windfall Profits and Impact on Lower-Income Groups

Decontrol has inevitable side effects which public policy must address. Decontrol generates substantial windfall profits and reduces the real incomes of consumers. Gradual phasing in of decontrol can mitigate those effects, but it cannot entirely eliminate them. Other measures are therefore needed.

Decontrol of domestic crude oil will transfer very substantial revenues from users of petroleum products to domestic crude oil producers. While some of these increased revenues will stimulate additional domestic production, a large proportion will represent pure windfalls—revenues that owners of oil properties receive solely because of actions taken by others. Windfalls do nothing to increase supplies. The windfall profits tax will divert a significant portion of these revenues to public uses that will help the economy to adjust to higher oil prices. Through the combined effect of the corporate income tax and the windfall profits tax, the Federal Government will collect considerably more than half of the additional net revenues accruing to producers. Certain States will also collect substantial additional revenues through their own tax systems.

Recent sharp increases in energy prices have had a significant impact on low-income households. A portion of the windfall profits tax will be used to cushion this blow. Public policy must try to offset the drain on the incomes of poor households from higher energy prices without blunting the incentive to conserve energy. Policies which directly reduce the perceived price of energy should obviously be avoided. But even income supplement programs, which might not appear to influence decisions at the margin, may blunt impulses toward conservation. The weaker the link between the amount of assistance and the family's actual energy consumption, the less interfer-

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ence there will be with conservation incentives, but the greater the likelihood will be that some poor families needing relatively large amounts of energy may have significant losses of income. The Administration's low-income energy assistance program represents a reasonable compromise in adjusting assistance to need without blunting conservation incentives.

The program provides two types of assistance to low-income households. The first is the special energy allowance, which provides assistance to recipients of supplemental security income and will provide grants to States to be distributed according to the energy-related needs of the low-income population. This program will cost $1.2 billion in 1980, increasing to $2.0 billion in 1981 and later years. The second is the energy crisis assistance program. It provides payments of $400 million per year that States can use to help low-income households with critical emergencies related to energy: the need to repair home heating systems, pay overdue heating bills, and obtain additional clothing or food. In 1980 the program will be completely financed by the Federal Government, but in 1981 it will become a matching-grant program with the States. After 1980, $2.4 billion in windfall profits tax revenues will be used annually for these programs to assist low-income individuals and families.

The Case for Additional Conservation and Supply Incentives

Although the incentives for increased energy conservation as well as for increased energy supplies must come principally from market prices, a strong case can be made for supplementary measures to push conservation and supply decisions beyond what the market dictates. The most telling argument is that the cost to the Nation of substantial dependence on imports exceeds the price that U.S. citizens pay for imported oil.

First, the United States is the world's largest importer of oil, accounting for about one-fourth of all world oil imports. Reductions in U.S. import demand will help ease pressures for higher prices in the world oil market. Second, the bill for imported oil adds substantially to the Nation's trade deficit. Reducing this bill will tend to strengthen the dollar, thereby lowering the cost of all imports. Third, an intangible but exceedingly important consideration is the cost to our security entailed by an excessive reliance on imported oil. The events of the past year graphically demonstrate these costs.

The conservation incentives in the Administration's energy policy are targeted to reach nearly every significant use of energy. Illustrations here will focus on two such uses: automobiles and residential space heating and cooling.

Fuel economy standards for autos. Automobiles represent the country's single largest user of petroleum products. As of 1978, American motorists were burning over 80 billion gallons of gasoline per year, almost 15 percent of total domestic energy use. Between 1950 and 1974 the average number of miles traveled per gallon of fuel consumed by newly produced cars dropped by 20 percent.

Even though this trend was reversed in the 1975 model year, the Energy Policy and Conservation Act passed in December 1975 required that automobile manufacturers substantially increase their improvements in fuel efficiency. By 1985 the average fuel efficiency of new cars must reach at least 27.5 miles per gallon (EPA test basis). While the relation between the Environmental Protection Agency's (EPA) estimates and actual mileage is uncertain, current estimates indicate that actual mileage for new cars is about 80 percent of the EPA figures.

Sharply higher gasoline prices in 1979 have caused consumer demand to shift toward smaller and more fuel-efficient cars. Due to the standards, this demand will be more easily accommodated.

The effect that improving the fuel economy of cars will have on domestic demand for energy will be substantial. Because of the time it takes to replace the entire fleet of domestic automobiles, the full effects of these improvements will not be felt until the mid-1990s. But by then, even if the annual average number of miles driven per car does not fall significantly from present levels, and even if the fleet continues to grow, the total amount of fuel consumed by U.S. passenger cars will be only about two-thirds of what it was in 1979. This savings would translate into about 2 million barrels of gasoline per day. To the extent that higher gasoline prices reduce the miles traveled per car and that further improvements in automobile fuel economy occur after 1985, the reduction in total gasoline consumption could be significantly greater.

Residential space heating and cooling. Residential space heating and cooling account for about 15 percent of all the energy consumed in the United States. This figure can be significantly cut by several relatively simple and inexpensive steps. Raising thermostat settings during the summer and lowering them during the winter directly reduce energy use and costs, though they entail some discomfort. Other measures, such as increased insulation and making structures more weatherproof, require investment but increase the efficiency with which any given degree of comfort can be attained. It is difficult to induce millions of individuals to undertake such changes. The single most important inducement for residential users to conserve energy will be the higher prices now confronting them. Indeed higher prices may be the only way to bring about permanent changes.

A targeted program of incentives can nevertheless accelerate investments in insulation and weatherproofing. The Administration's program to encourage energy conservation in residential structures requires that electric and gas utilities offer to perform "energy audits" of their customers' residences, thus enabling households to pinpoint sources of serious heat losses and learn how to remedy them.

The program also provides financial assistance to households for installing insulation, caulking, weatherstripping, storm windows, and fuel-saving heating equipment. Households at all income levels are helped in various ways. For example, a 15 percent tax credit on the first $2,000 spent on qualified conservation measures is available to any household. Households with low or moderate incomes may apply for a direct interest subsidy of up to 35 percent with a limit of $1,000 per loan. (This limit includes the value of any tax credit taken.) The Weatherization Grant Program goes even further in assisting families with low incomes; it supplies grants for qualified energy-saving measures. Supplementing these provisions, the program requires that utilities offer to help customers finance the energy-saving measures they may need to take.

Special incentives are available to encourage use of solar energy. Builders of new structures utilizing passive solar technology may be eligible for a tax credit up to $2,000 per residence or $10,000 per commercial building. A tax credit of up to $2,200 is available for new homes with active solar systems. A proposed Solar Bank would provide interest subsidies of up to 40 percent on loans for equipment to convert to solar energy.

The improvements that these programs and higher energy prices could produce are impressive. One private study estimates that by incorporating in existing and new residential structures only those technological improvements in heating systems and building shells that are economically justifiable at an energy price equivalent to $30 per barrel for oil, the total U.S. consumption of energy for residential heating could be reduced to about half its 1975 level by the year 2000. This translates into a reduction in energy demand equivalent to approximately 2 million barrels of oil per day.

Developing Additional Domestic Supplies of Energy

Policies to stimulate savings in energy must be supplemented by programs to add to domestic supplies of energy. Even after decontrol, the unaided market place may not in all instances generate the needed investment in new energy supplies. Or it may do so more slowly than is desirable, especially in the case of investments involving new technology for increasing the supply of energy.

The synthetic fuels program. Events of the past few years have demonstrated that future oil prices are hard to estimate. Yet a private investor must predict not only the level but also the path of world oil prices in deciding whether to undertake a development project for synthetic fuel.

The difficulty is more than statistical. If world oil prices were market determined, then an investor might reasonably estimate when the rising world oil price would so far exceed the cost of commercializing a given synthetic fuel technology that he would be compensated for the risk of proceeding. But world oil prices are not market determined. The present price reflects both demand considerations (including the demand for increased stocks) and OPEC's desired production levels. The latter incorporate the OPEC countries' assessment of the oil prices they can charge in the future.

The cost of producing synthetic fuels in commercial quantities, however, can have an important effect on this judgment. As the prospects of substantial supplies of synthetic fuels increase, OPEC countries may be induced to expand their own oil production considerably because of the depressing effect of this development on the value of their oil reserves. Thus the potential investor faces a risk that the world price of oil will be less than his break-even point; he has little chance of making much more than a going rate of return on his capital. Few private concerns would be willing to invest in synthetic fuels on the basis of forecasts that world oil prices will rise by a given amount. They would more likely wait until the world oil price came fairly close to the estimated cost of synthetic fuel production. This would not present a problem if a synthetic fuels industry could be developed quickly, but more than a decade will probably be required before much capacity can be brought into operation.

A paradox here underlines the need for some governmental role. The more OPEC countries are convinced that high oil prices will bring a large synthetic fuels industry into existence, the more their own decisions are likely to lead to moderate pricing. But the more potential investors fear this reaction from OPEC, the less likely they are to make the investments needed for developing a large-scale synthetic fuels industry on their own.

In addition to such price risks, new products like synthetic fuels involve serious technological uncertainties. Several processes may be able to produce synthetic liquid fuels. The absolute and relative costs of each are highly uncertain. Given the large capital costs, the risk of picking the wrong technology could discourage private, commercial-scale investment in any one.

The preceding argument applies equally to all of the so-called unconventional sources of energy. The development of a significant domestic capacity to produce liquid fuels from biomass, a substantial increase in the use of solar energy, or the development of major new sources of natural gas would all tend to limit the rise in OPEC prices to a degree that depends on the cost at which each resource could be brought to market. The Administration is strongly supporting programs in each of these areas tailored to the specific technological characteristics and the current state of development.

During the past year, techniques which would tap the Nation's vast supplies of coal and shale and biomass were singled out for special attention. These now seem to be at a stage where a focused effort might hasten their commercial use. The Administration has therefore proposed the creation of an independent government corporation to assist in this major undertaking.

The Energy Security Corporation (ESC) will have a number of instruments at its disposal. It will be able to use at its discretion both loan guarantees and outright loans to assist private enterprises pursuing approved synthetic fuel projects. The Corporation will also be able to shelter to some extent the developing concerns from the risks they would otherwise face because of the uncertainty of future oil prices. Purchasing agreements or price guarantees will be arranged at firm prices for the project output, but the agreements will require private enterprise to bear a fair share of the risks. The variety of instruments available to the Energy Security Corporation increase its ability to assist recipients without removing the normal incentives to exercise prudent judgment and keep costs to a minimum.

The Energy Security Corporation will also be able to participate in cooperative or joint ventures with private companies. In an extremely limited number of cases, it may also construct and operate facilities for processes that have technical merit but cannot be sufficiently developed by other means.

IMPLICATIONS FOR THE ECONOMY

The energy policy initiatives undertaken during this Administration will sharply alter both the future consumption of energy in this country and the range of energy sources. Most important, the Nation's reliance on oil, especially imported oil, will be cut. By the end of the decade the economy will be well on its way toward completing this transition—one of the most important and difficult it has ever faced.

Total U.S. energy use in 1978 amounted to 78 quadrillion Btu (quads). Estimates for 1990, made soon after the 1973–74 oil price rise, were as high as 120 quads. More recent forecasts have been re-

vised sharply downward and seem to be clustering near 100–110 quads. Given recent rapid increases in oil prices, even lower figures can be expected.

The composition of expected demand for fuels reflects a relatively more rapid rise in the price of oil. In 1978 nearly half of the country's primary energy demand was met by petroleum. In most present forecasts this share falls sharply; some project it to be as low as one-third by 1990. Removal of price controls on domestic crude oil will ensure that the highest possible share will be met by domestically produced oil.

In mid-July the Department of Energy estimated that the various steps already taken or announced would reduce oil imports to approximately 4.5 million barrels per day by 1990—far less than earlier estimates of imports, which were as high as 13 million barrels per day. Events since July have reinforced the belief that record levels of oil imports are already behind us.

Requirements for Higher Investment Levels

Changes in private consumption and production in response to higher energy prices, the supplemental conservation measures induced by regulation, and the development of new, unconventional sources of energy in the United States will all require substantial investments by both the private and the public sectors. Estimates vary, but the following figures (all in 1978 dollars) give some idea of the possible magnitudes.

The Department of Energy has estimated that the domestic oil and gas sector will need to invest an average of $25 to $30 billion annually during the 1980s for exploration, development, production, and refining capacity just to achieve the lower share of energy supply that has been projected for it. Other private estimates range as high as $35 billion per year. Comparable expenditures were less than $13 billion in 1972 and approximately $20 billion in 1978. The Department of Energy also estimates that the domestic coal industry will have to invest between $5 and $6 billion annually during the 1980s if it is to increase its output as forecast. This compares to actual investments of less than $1 billion in 1972 and $2.4 billion in 1978.

Building a domestic synthetic fuels industry will also be expensive. The costs of developing the technology and installing operating capacity are still highly uncertain; but to create the capacity to produce about 1¾ million barrels of coal liquids and shale oil per day by the early 1990s at a capacity cost per barrel of output per day of about $40,000, investment will probably average more than $6 billion per year over the next decade. While the ESC will provide various forms of assistance, most of these funds will come from the private sector.

The adjustments in consumption induced by decontrol, with its consequent higher prices, and the supplementary conservation measures will also be costly. Fuel-saving features installed in old and new dwellings will add at least an additional $4 billion per year to the cost of residential construction. Similar conservation measures for new and old commercial structures will also add to construction costs. Finally, the replacement or refitting of portions of our industrial plants may have to be accelerated. Facilities that might have been marginally profitable for a few more years at pre-1974 or even pre-1979 energy prices may have become unprofitable at current energy prices. Any such acceleration in obsolescence will add to required annual investments during the mid-1980s.

CONCLUSION

The developments in the domestic and international energy markets during this past year have profoundly affected the economy. Energy consumers and producers have begun in earnest to adjust to higher prices. These adjustments—belt-tightening in some cases, or finding more energy-efficient ways to do things—have been costly and in some cases painful. But as a result, the economy should gradually become less dependent on foreign sources of oil and consequently less vulnerable to disruptions in supply. It is imperative that the Nation persevere in these efforts.

STRIKING THE PROPER BALANCE IN REGULATION

That the pace and scope of the government's regulatory activity have increased sharply over the last decade is obvious. Whether and how the government should regulate certain activities have become familiar questions in policy debates. In the case of traditional economic regulatory activities, especially with regard to transportation, communications, and finance, there has been a growing recognition that we need to reduce direct regulation and give greater play to competitive forces. In these sectors regulatory reform has become synonymous with deregulation. But for the newer forms of regulation dealing with social concerns such as the environment, occupational health and safety, and the safety of consumer products, regulatory reform has come to mean not deregulation but more flexible and more cost-effective regulation. The government is increasingly seen to have a legitimate role in helping the private sector to attain socially desirable ends that cannot be achieved in the market place. People have also become much more aware that regulation often adversely affects productivity, at least as it is conventionally measured.

Over the last 3 years the Administration has made marked progress in reforming this country's regulatory institutions and procedures. In some cases regulatory structures existing for decades are being dismantled, exposing the industries they protected to new forces of competition. In other areas important procedural reforms have been put into place to help assure that, subject to legislative mandates, regulations set reasonable goals and meet those goals in a cost-effective manner. The job of reforming the regulatory process is far from complete, but an important beginning has been made.

REGULATORY POLICY AND PRODUCTIVITY

Government regulation of individual and corporate behavior takes many forms, including common law rules of liability, antitrust laws, restrictions on international trade, and regulatory rules of all kinds at the Federal, State, and local level. The ways in which this activity affects productivity are varied and complex, but several broad generalizations can be made:

First, regulations which divert capital and labor from the production of steel, automobiles, or clothing (where output can be readily measured) to the production of environmental cleanliness, workers' safety, or other goods whose values are difficult to measure, entail a loss in measured productivity. This is not necessarily a matter for concern, since it stems primarily from the limitations of what can be captured in the national income statistics.

Second, regulatory procedures which cost more in capital and labor than they yield in social benefits, or which require more resources than are necessary to meet stipulated social targets, do reduce national productivity, both measured and unmeasured.

Third, many economic regulations directly cut productivity. Before recent decontrol actions, airline regulations encouraged low load factors on airplanes. Current trucking regulations require needless empty backhauls and circuitous routing of trucks, both of which reduce productivity. Many local building codes necessitate the use of excessively costly materials. Perhaps an even more important cause of lower productivity is the attempt by many of the older economic regulatory bodies to preserve the domain of some established industries. Such protective measures can suppress the competitive pressures that force otherwise staid firms to adopt innovative ideas and improve their productivity.

Some loss in measured productivity is a necessary and unavoidable consequence of regulation. But there are also avoidable losses stemming from regulatory activities. Regulatory reform that works toward

the elimination of outmoded economic regulations and promotes improvements in the balance and cost effectiveness of social regulation can contribute to growth in productivity.

REMOVING OBSOLETE REGULATORY STRUCTURES

The reasons why industries were originally made subject to detailed economic regulation regarding the prices they charged and the conditions under which they provided service were many and varied. One obvious example was the objection to the so-called "natural monopoly" enjoyed by an industry with such large economies of scale that meaningful competition was impossible. In other instances fear of "destructive competition" provided the primary rationale for regulation. Extending the scope of service was yet another aim behind government intervention. In many cases the original justification is no longer valid; in others it never existed. Legislative and administrative action is helping to remove these obsolete regulatory structures.

In late 1978, with the cooperation of the Congress, the Administration succeeded in opening up the domestic airline industry to meaningful entry and truly competitive pricing for the first time in at least 40 years. This was the culmination of a process of liberalization that had begun several years earlier. Under regulation, airlines competed through quality of service; under deregulation consumers benefited immediately from an expanded volume of flights and lower fares. By September 1978 the average level of domestic and foreign air fares for the 11 largest U.S. airlines had fallen 2.8 percent from the year before and stood only 1.4 percent above their 1976 level. In October 1978 air fares were actually lower than 2 years earlier.

Some critics have interpreted recent increases in airline fares as evidence that deregulation, though perhaps successful initially, will be a failure in the long run. Nothing could be further from the truth. Deregulation of an industry does not render it immune to increases in prices of factors of production. It does affect the degree to which such increases are translated into higher unit costs and prices. The airline industry has recently provided graphic proof of how reduced regulation can improve productivity and hence price performance.

As of the end of September 1979, average fares for the 11 domestic trunklines were 7.8 percent above their mid-1977 levels. But average weighted input prices for the airlines rose by 35.4 percent over this same period. These rises in input prices were largely offset by improved productivity. Load factors—the percentage of seats filled—rose from 56.1 percent during the first 9 months of 1977 to 65.1 percent during the comparable period in 1979. The airlines increased the number of seats per aircraft by 8.6 percent for the large DC-10s and L-1011s, and by 4.3 percent for the smaller 727s. Finally, air-

lines have used their aircraft fleets more intensively. Airborne hours per aircraft per day rose by 12 percent between the third quarter of 1977 and the third quarter of 1979. Greater use of the airlines' capital stock has reduced passenger comfort and curtailed some other amenities, but the lower fares it permits compensates for these reductions in service.

The record under regulation offers an instructive contrast. During the mid-1970s, airline input prices also rose substantially; in 1977 they averaged 56 percent above their level of 1973. During this period, however, the airlines lacked the strong spur to productivity brought about by deregulation. Fares rose by 32 percent. Although airlines' profits have weakened during recent months, orders for new, fuel-efficient aircraft have continued to be strong. The difficulty of obtaining long-term credit, which accompanied some industry downturns in the past, as yet shows little sign of occurring.

The experience of the airlines during this past year differs sharply from that of certain segments of the regulated trucking industry. Here lack of fuel, large fuel price increases, and sticky Interstate Commerce Commission rates were significant factors in leading many of the smaller, independent truckers to go on strike rather than operate their trucks at a loss. The result was a shortage of trucking capacity and a disruption in commerce.

It is both impractical and inequitable to dismantle regulatory institutions overnight. Producers and consumers, as well as suppliers and others indirectly dependent on the industry, must have time to adjust to a less regulated market environment, and some may be hurt by less stringent regulation. Transitions must therefore be planned for the groups seriously affected by the change. For this reason the Airline Deregulation Act of 1978 permits a gradual phase-out of the Civil Aeronautics Board's regulatory activity and of the Board itself over a 6-year period. The act also provides continued subsidies for essential service to communities affected by the easing of abandonment restrictions.

Substantially relaxing detailed economic regulation of an industry does not mean the end of governmental interest in the industry's performance. For example, the eventual abolition of the Civil Aeronautics Board will not weaken the powers of the Federal Aviation Administration to regulate airline safety. The Administration is committed to basic reforms in economic regulation and to incorporating in them the adjustments needed to ease the legitimate problems of transition. The President has introduced or is supporting legislation embodying these principles, which would substantially reduce Federal regulation in trucking, railroads, telecommunications, and finance. As

the record of airline deregulation has so graphically illustrated, these initiatives offer the prospect of large gains in productivity.

The Administration's trucking bill proposes a sharp reduction in regulatory barriers to competition. Among other things, the bill will make entry into common-carrier trucking easier and will phase out the numerous commodity and route restrictions which limit competition between firms in this segment of the industry. It will significantly broaden the exemption from regulation currently enjoyed by the transporters of some agricultural commodities and permit the Commission to grant similar exemptions to other classes of commodities, if this seems in the public interest. The bill permits freight forwarders and contract carriers to hold common-carrier certificates and ends the artificial limit on the number of shippers that contract carriers may serve. Private carriers will be allowed to apply for authority to haul noncompany commodities, to provide transportation for corporate subsidiaries, and to "trip-lease" for single trips to carriers holding certificates. Finally, it will end the exemption granted in 1948 (over President Truman's veto) of rate bureaus' activities from antitrust litigation. Because of the Administration's belief that truck safety is currently inadequate, the Administration's bill would substantially increase the government's responsibility for this activity and the Federal resources channeled into it.

The Administration's efforts are also directed at broadening the gains achieved by earlier reform legislation affecting railroads. The intent of this legislation has been blunted by the Interstate Commerce Commission's overly restrictive interpretation of certain of its key provisions. The Administration is working with the Congress to see how increased pricing flexibility can be achieved in ways that do not reduce the protection offered "captive" shippers, and it has also sought to make abandonment of unprofitable services less difficult.

In his September 1979 message on telecommunications policy the President supported congressional efforts to amend the Communications Act of 1934. Consumers are already benefiting from Federal Communications Commission (FCC) actions that have increased competition in the market for telephone sets and for certain sophisticated data-processing and private-line services. But in spite of extraordinary technological advances that now make it possible to hold meetings, transmit messages, perform research, bank, shop, and receive a widening variety of information and entertainment through electronics—and that invalidate the assumption that all telecommunications enterprises are natural monopolies—the basic statutory framework for regulating telecommunications has remained unchanged. The President's message encouraged legislation to promote competition wherever it is workable. (If necessary, some markets, such as local

telephone exchanges, may remain regulated monopolies indefinitely.) He also urged removal of restrictions based on out-of-date market distinctions, such as that between telecommunications and data processing, and he advocated allowing the FCC to develop more efficient means of assigning nonbroadcast frequencies. At the same time, the President reaffirmed the Administration's support for regulations to make basic telephone service available to all at affordable rates and for measures to protect the technical quality of the telecommunications network.

In May 1979 the President sent a financial reform message to the Congress urging that deposit interest rates be permitted to rise to market levels after a period of orderly transition, and that federally insured institutions be authorized to offer interest-bearing transactions accounts to individuals. The President also urged the Congress to grant all federally chartered savings institutions the power to offer variable rate mortgages and to invest up to 10 percent of their assets in consumer loans. This package was intended to bring the benefits of market rates to small savers, promote a steadier flow of credit to finance housing, and improve the efficiency of financial markets. Although a bill was passed by the Senate which addressed all of the President's May proposals, the House-passed bill was less comprehensive. Resolution of the broader questions was postponed until 1980, but the Congress did pass more limited legislation extending through March 31, 1980, authority for credit union share drafts, automatic transfer services, and savings and loan institutions' remote service units. These three services effectively enable depositors to earn interest on deposits that are used for making current transactions.

BALANCING COSTS AND BENEFITS IN INDIVIDUAL REGULATIONS

Eliminating large areas of regulation is not the appropriate route to reform of regulations aimed at environmental protection, health, safety, and other social goals. Rather, attention must focus on the processes and techniques of regulation. One especially important task is to ensure that the individual regulations consider the balance between gains and social costs and the adoption of cost-effective approaches.

The designing of any regulation involves an implicit weighing of costs against benefits. How explicit any such balancing should be or can be is a major question, especially in regulation affecting the environment, health, and safety. Although any explicit effort to determine the "appropriate" level of health and safety meets with opposition, many similar choices are being made implicitly. It is clear, for example, that traffic fatalities could be reduced by drastically lower-

ing maximum speed limits or by providing pedestrian underpasses at all major traffic intersections. The failure of society to take these actions reflects a tacit judgment that the benefits in safety do not warrant the costs. Society also implicitly recognizes that a risk-free world is impossible, and that pursuing such a goal would lead to unacceptable reductions in social welfare. Indeed, reducing some risks can generate new risks elsewhere. For example, prohibiting the use of sodium nitrite as a meat preservative may cut the risk of cancer but increase the risk of botulism.

The Administration has sought to encourage balanced and cost-effective regulation through the requirement for regulatory analysis called for in Executive Order 12044, signed by the President on March 23, 1978, which applies to executive branch agencies and departments but not to the independent regulatory agencies. The order requires that agencies' policy makers give increased attention to regulatory issues, provide greater opportunity for public participation in the development of regulation, and conduct "sunset" reviews of existing regulations. In addition, the order requires that agencies prepare a regulatory analysis for each major regulation. The analysis must examine the costs and other burdens imposed by the proposed regulatory action and compare them with those of alternative actions differing in approach, timing, degree of stringency, or scope.

The purpose of regulatory analysis is not to reduce all costs and benefits to dollar sums that can be mechanically compared. Some monetary costs cannot be confidently estimated—the costs, for example, of introducing untested changes in technology or production processes, or of changing the attributes of products or the location of plants. Even more clearly, many social benefits cannot be easily converted to monetary terms. But costs and burdens can be identified and in many cases measured. Benefits can be described and often analyzed at least partially in quantitative terms even if not in dollars.

The fundamental premise of the requirement for regulatory analysis is that the difficulty of measuring costs and benefits justifies neither indiscriminate regulation nor the elimination of all regulation. The analysis required by the Executive Order is not a cost-benefit analysis which automatically dictates the decision; it is a procedural mechanism—a decision-making tool—for examining the costs and other consequences of achieving regulatory goals.

Regulatory analyses are not easy to prepare, but they play an important role. A formal regulatory analysis forces the rulemaking agency to consider explicitly the objectives of a major regulation and the best route to those goals. It requires consideration of process as well as outcome. This sort of thinking is a prerequisite for good rulemaking.

A draft regulatory analysis is issued when a regulation is first proposed. It can thus play a part in the public debate over the rule. Members of the public can examine and evaluate the agency's assumptions and objectives. The President has also established an interagency group to review and comment upon selected regulatory analyses. The Regulatory Analysis Review Group comprises representatives from the Executive Office of the President and from all executive branch economic and regulatory agencies. This group, which is chaired by the Council of Economic Advisers, has completed five comprehensive reviews during each of the past 2 years. In 1979 this group's reports, submitted for the public record, covered the Environmental Protection Agency's hazardous waste standards and new source performance standards for electric utility plants; the Department of Energy's proposed and interim final regulations on coal conversion for utilities and industrial boilers; and the Department of Health, Education, and Welfare's proposal for labeling to accompany prescription drugs. At year's end, reports were being prepared reviewing the Environmental Protection Agency's air carcinogen policy, its guidelines for water effluents in the leather-tanning industry, and the Department of Energy's standards for the energy performance of new buildings.

The number of reviews that the group can undertake in any one year is quite limited. Furthermore the Executive Order does not apply to independent regulatory agencies. Comments filed by the Council on Wage and Price Stability, however, partially fill the gap. That Council is directed by statute to comment on the economic impact of rules and regulations proposed by both the executive branch and the independent agencies. In 1979 the Council on Wage and Price Stability filed 58 comments in rulemaking proceedings.

The Administration's regulatory reform legislation would make the regulatory analysis called for in Executive Order 12044 a permanent requirement and extend the order to cover the independent regulatory agencies. Agency heads would be required either to choose the least burdensome alternative or to explain their proposed course of action. Selecting the least burdensome alternative would not be mandatory if there were a justification for choosing another approach. The relevant substantive statute would continue to govern the final decision.

Several existing statutes have been interpreted as limiting the extent to which regulatory agencies can consider costs (including added risks). However, even for agencies having little or no discretion to balance costs against benefits, the regulatory analysis allows consideration of cost effectiveness. If even this degree of flexibility is not within the terms of the statute, the rationale for precluding cost ef-

fectiveness should be continuously re-evaluated in the light of new knowledge. The Administration supports "sunset" review legislation that would require just such periodic re-examination of major regulatory mandates.

COORDINATING REGULATORY PROGRAMS

Improving individual regulations is an important part of long-term economic policy, but more is needed for effective management of the regulatory process. Many individual regulations overlap, and some try to serve conflicting objectives. For example, congressionally mandated emission standards for automobiles have sometimes tended to decrease fuel economy. When they do this, they make it harder for auto companies to meet the Department of Transportation's standards requiring a steady increase in fuel economy. This is not a case of confused action but of conflicting goals. In designing an automobile, some balancing may be necessary between cleaner air and energy conservation.

The President established the Regulatory Council, composed of 36 Federal departments and agencies, to help achieve better coordination among regulatory programs and expand efforts to manage the regulatory process more effectively. At the President's direction the Council prepares the semiannual *Calendar of Federal Regulations.* This provides in one document a concise summary and analysis of important regulations being developed by each of the executive branch agencies and by those independent regulatory agencies that choose to participate. It includes all major rulemakings in progress or expected during the coming year and thus provides a means of identifying potential overlaps or conflicts as well as previewing the impact of the rules on affected sectors.

The Regulatory Council will assess the cumulative effects of regulations issued by a number of different agencies on particular sectors or industries. The Council has begun a comprehensive analysis of how regulation affects the automobile industry, and it is conducting projects related to coal, hospitals, and nonferrous metals. In addition, the Council has successfully coordinated a joint policy statement by the five Federal agencies with primary responsibility for regulating carcinogens. The activities of the Council should help reduce two of the major sources of unnecessary costs of regulation—uncertainty about regulatory policies and conflict or duplication in regulatory actions.

SETTING PRIORITIES

Because we do not live in a world of unlimited resources we cannot simultaneously achieve all desirable social goals. Rational social

regulation requires priorities in our use of the resources at hand. No purely technical means can determine what resources should be devoted to social goals in any given year. That must come from the political system. Although some implicit balancing of goals occurs, more explicit attention should be devoted to the aggregate and sectoral consequences of regulation and to the problem of priorities.

Until recently efforts by the Federal Government to promote social goals relied principally on direct expenditures. Since 1921 the Congress has required that these expenditures appear in the Federal budget. The budget process allows explicit tradeoffs to be made and the appropriate level of government action to be debated. But as more goals are pursued through rules and regulations mandating private outlays rather than through direct governmental expenditures, the Federal budget is an increasingly inadequate measure of the resources directed by government toward social ends.

As a result, proposals have been made that the Federal Government develop a "regulatory budget," similar to the expenditure budget, as a framework for looking at the total financial burden imposed by regulations, for setting some limits to this burden, and for making tradeoffs within those limits.

However, a regulatory budget is not without problems. In the case of particular programs in the expenditure budget, past outlays are known and most future outlays can be predicted with some accuracy. Estimates of the past or future costs of regulation, some of which may be important to the development of a regulatory budget, are much less certain. It is difficult, for example, to specify all the costs to a firm when it must locate a new plant according to its third choice rather than its first. It is equally hard to measure the cost of banning the manufacture of a product.

A regulatory budget would also have to take into account the basic difference between the processes through which regulation and expenditures are determined. For Federal expenditures, the President initially sets priorities in the budget he submits to the Congress, which has the final word in adjusting those priorities through appropriation and revenue bills. For social regulations the order is generally reversed. The Congress passes regulatory statutes which set forth objectives with varying specificity. A number of executive branch agencies and independent regulatory agencies are delegated the power, subject to judicial review, to implement those objectives through specific regulations on a case-by-case basis. Regardless of which branch initiates and which completes the priority-setting, however, it is clear that the regulatory process as yet lacks any mechanism analogous to the expenditure budget for comparing and integrating priorities among different program areas.

As the process of regulation develops, more consideration will need to be given to the impact of regulations on the economy. The Nation must recognize that regulation to meet social goals competes for scarce resources with other national objectives. Priorities must be set to make certain that the first problems addressed are those in which regulations are likely to bring the greatest social benefits. Admittedly, this is an ideal that can never be perfectly realized, but tools like the regulatory budget may have to be developed if it is to be approached.

NEW APPROACHES TO REGULATION

Growing recognition that social regulations have significant and sometimes unintended indirect effects on the economy is producing pressure to modify regulatory mechanisms. One modification may take the form of alternatives to, or variations of, the "command-and-control" approach, which uses detailed regulations to specify permissible behavior. This approach often creates inflexibilities that add unnecessarily to the burdens imposed by the regulations. In the past few years regulatory agencies have begun to experiment with alternatives or supplements to traditional regulation. For example, the Environmental Protection Agency has developed an "offset" policy under which firms can set up activities that result in pollution in areas not currently attaining air quality standards only if they can purchase greater reductions in the pollution from existing sources. The agency has also recently promulgated a "bubble" policy, to be applied under carefully controlled conditions, which permits a firm to trade further reductions in emissions from one source for increases in emissions from another. Since firms can thereby reduce pollution most where costs are least, the same overall reduction of pollution can be achieved at a lower cost (or more improvements realized for the same cost). A similar approach was taken in permitting corporate-fleet averaging in the present standards for automobile fuel economy.

Regulation can be improved in other ways as well. Although there is some doubt about the ability of consumers to assess and assimilate certain information, the strategy of informing the public instead of banning questionable products shows promise in some situations. During 1979 the National Highway Traffic Safety Administration made data available to potential buyers on how well cars can withstand crashes, and the Consumer Product Safety Commission continued to publish information about hazardous products as an alternative to outright bans or restrictions. Such programs help consumers become better able to judge competing products.

Increasing the information consumers can draw upon sometimes complements more traditional structural remedies as a means of fostering competition in a market. The Department of Agriculture is currently trying to replicate in the United States the results of a recent Canadian experiment that achieved price reductions of 3 to 7 percent on a typical market basket of food items by disseminating comparative price lists for local grocery stores. If successful, this strategy of fighting high prices by helping consumers take advantage of price differentials among retailers could have wide application.

CONCLUSION

Regulation has joined taxation, and the provision of defense and social services as one of the principal activities of government; it has just as much need for effective management. Careful and responsible management of the government's regulatory efforts is all the more vital because many of their effects on the economy are subtle and difficult to discern. Although some regulation can be largely or wholly eliminated, most of the government's regulatory activities are here to stay. This country will not give up the protection afforded by these programs, any more than it will give up education or a sound defense. But it has every right to demand its dollar's worth. The Administration's regulatory reform effort over the past 3 years has been designed to assure just that.

PROMOTING FLEXIBILITY IN THE LABOR MARKET

How well the labor market functions will be crucial in any successful long-run strategy for reducing inflation. Wages constitute a major part of production costs, and the supply and productivity of labor help determine how much of which goods and services will be sold at any particular price. The more rapidly and smoothly the labor market adjusts to changes in the supply and demand for labor, the less delay and cost will be entailed in accommodating such major economic dislocations as the sharp rise in energy prices. Efficient adjustment in the labor market makes possible a greater growth in employment and output without hindering the long-term reduction in inflation.

Output and the demand for labor do not grow evenly in all industries and occupations. In a poorly adjusting labor market, unsatisfied demands for labor in rapidly growing sectors or occupations can generate inflationary pressures while unemployment and economic slack are still high elsewhere in the economy. In such situations inflation can be avoided only by more restrained monetary and fiscal policies and a slower growth of overall employment than would have been possible in a more efficient labor market.

In a modern industrial society, raising the productivity of labor is less a matter of changing worker motivation than of attracting labor to the sectors of the economy where it is most productive and then combining it effectively with other resources. Therefore a labor market in which the demand and supply of labor adjust smoothly raises the general productivity of the labor force.

The use of labor market policy as part of an anti-inflation strategy poses three requirements: (1) to identify the sources of potential labor market pressures; (2) to consider how well the labor market is likely to cope with these developments; and (3) to ascertain the measures most likely to promote timely and effective labor market adjustments.

LABOR MARKET DEVELOPMENTS IN THE 1980s

On the demand side, two developments that will probably require continuing adjustments in the labor market during the years ahead are rising energy prices and the increasing importance of international trade. Governmental policies that help the labor market adjust to these developments will also help build an energy-efficient economy, pull labor into more productive uses, and thus work to reduce inflation.

Energy. Technological adaptation to a higher real price of energy entails two major shifts in employment. First, labor is needed to build, operate, and maintain the new sources of energy. Second, workers must adapt to the new productive techniques that become economically efficient at the higher energy prices.

The amount of labor directly required by the President's energy program depends on the mix of energy sources, the technology used to produce energy, and the labor required for constructing, operating, and maintaining these projects. The Administration's initiatives are expected to increase substantially the demand for labor in the energy sector. Employment in the industries supplying goods and services to the energy sector will also increase. The distribution of these added jobs will not be uniform either geographically or by skills.

In the remainder of the economy, higher energy prices, once adjusted to, will also lead to changes in employment patterns. Some studies using data through the early 1970s have suggested that higher fuel prices cause a substitution of labor for energy and capital in manufacturing industries, although the evidence on this, as noted earlier, is mixed. Historically, energy and blue-collar workers have appeared on average to be substitutes in production; energy and white-collar workers in manufacturing have appeared to be complements. If those relationships continue as energy prices rise, the consequent increases both in gross manufacturing employment and in

the ratio of blue-collar to white-collar jobs may partially offset a trend of the past several decades. Given the uncertainty about the technology that will prevail in a world of sharply higher energy prices, however, predictions about the impact of higher energy prices on employment patterns must remain tentative.

International trade. Over the past two decades U.S. foreign trade has expanded very considerably. Real exports have increased steadily from 4.1 percent of real GNP in 1950 to 8.4 percent in 1979. A growing role for international trade tends to favor industries for which our Nation has particular efficiencies; it also helps provide an additional competitive force to the market. On both counts, trade has a moderating effect on inflation. But it also forces shifts in employment. Jobs become fewer in domestic sectors threatened by imports; they increase in industries which are more competitive in world markets. Since the comparative advantage of the United States tends to be in its high-technology, capital-intensive industries, a growth in exports shifts the demand for labor toward more highly skilled workers with more advanced training.

Other factors. If the adjustments required by international trade and higher energy prices are encouraged rather than hindered, changes in the composition of labor demand during the next decade should favor a faster productivity growth. Reducing race and sex discrimination will also improve productivity because human resources will be put to more advantageous use. The virtual disappearance of wage discrimination against young blacks with high levels of education is a favorable development. Unless the pace of improvement is accelerated, however, it will still be many decades before all wage discrimination against blacks is eliminated.

Supply Side

The dominant force on the supply side of the labor market during the 1980s will be the aging of the large World War II "baby boom" generation. As Table 21 shows, young people in the 16–24 age group have represented one of the fastest growing components of the labor force during the 1970s. In the coming years their share of the labor force will decline swiftly. At the same time the proportion of the work force accounted for by prime-age and the more experienced workers will grow rapidly.

This demographic change should help reduce both inflation and unemployment. The growth in the relative size of the experienced work force means that average productivity should rise. The fact that young people, whose unemployment rates are usually higher than average, will represent a smaller fraction of the work force, will itself tend to lower the level of aggregate unemployment at which inflationary pressures begin to emerge. Finally, young members of minor-

TABLE 21.—*Share of selected demographic groups in the civilian labor force, 1970–85*

Group	1970	1977	1985 (projected)	Annual percent change in share [1]	
				1970 to 1977	1977 to 1985 (projected)
	Share (percent) [2]				
All youth (16–24 years)	21.6	24.3	21.6	1.7	−1.5
Black and other minority youth (16–24 years)	2.6	2.8	2.7	1.2	−.7
All prime-age (25–54 years)	60.9	61.0	65.7	.0	.9
Prime-age women (25–54 years)	22.0	24.3	28.7	1.4	2.1

[1] Percent changes based on unrounded shares.
[2] Percent of civilian labor force.

Source: Department of Labor, Bureau of Labor Statistics.

ity groups, whose unemployment rates are now exceedingly high, should find it easier to secure entry-level jobs in a work force where there are fewer young people seeking such jobs.

The productivity of the labor force depends not only on the number and experience of workers but also on their education. As Table 22 shows, a general increase occurred during the past four decades in the years of schooling of all groups in the labor force, with a dramatic rise for blacks. School enrollment rates for whites and nonwhites are now comparable. Unfortunately, trends in the quality of education have not all been favorable. For elementary school children an improvement in basic skills and a substantial lessening of racial differentials are evident. But there has been no improvement in the skills achieved in the secondary schools. Blacks and low-income city youths do especially poorly in tests measuring functional literacy, and this weakness may contribute to their unemployment problems.

TABLE 22.—*School attainment of 25- to 29-year-olds, 1940, 1960, and 1978*

Item	All persons	Blacks
Percent with—		
Less than 5 years of school:		
1940	5.9	27.7
1960	2.8	7.0
1978	.9	.8
4 years of high school or more:		
1940	38.1	11.6
1960	60.7	37.7
1978	85.3	77.3
4 years of college or more:		
1940	5.9	1.6
1960	11.1	4.8
1978	23.3	11.8

Source: Department of Commerce, Bureau of the Census.

There is some evidence that the gap between the achievement of black and white students has been narrowing. Future improvements in productivity performance would be aided by continuation of this movement.

HOW WELL CAN THE LABOR MARKET ADJUST?

Policies that will help the labor market allocate resources so as to raise productivity and reduce the waste of human resources need to be targeted to areas where the market fails to perform effectively.

The fact is that the labor market worked quite well for most people during the 1970s; the serious failures were concentrated among special groups. During this period the civilian labor force grew by some 21 million workers, or 25 percent. One-third of that growth was among young people from 16 to 24 years old, and 39 percent was among women between the ages of 25 and 44. Although unemployment rates for those groups rose over the decade, the percentage increase in their unemployment rate was less than that of the total unemployment rate. Indeed, the market even works well for most youths; they find jobs without difficulty when they enter the full-time labor force.

There is a large flow of workers through the labor market each year as people change jobs and individual firms hire and lay off workers. In January 1978 a special study by the Bureau of Labor Statistics showed that fewer than 72 percent of those employed had held the same job they were in a year earlier. Transfers on so large a scale imply that the labor market is relatively flexible and capable of making major adjustments. Moreover, fewer than 42 percent of those unemployed in 1978 were on indefinite layoffs or had lost their jobs. Most were re-entering the labor force, had quit their last job, or had never worked before.

While the market has worked well for most groups, it has not worked well for all. The greatest problems are concentrated among disadvantaged young people, especially blacks. Approximately three-fourths of the weeks of unemployment reported by youths are accounted for by those who have been unemployed for periods totaling more than 15 weeks within a year. A disproportionate share of those young people are black. Over the past 15 years the employment-population ratio for black youths has been falling both absolutely and relative to the record for white youths. A Department of Labor study found that among black males aged 16 to 19 the unemployment rate rose from 23 percent to 42 percent between March 1964 and March 1978. Among black teenage females there was an increase from 35 percent to 44 percent over the same period. Increases were especially large for central city black teenagers attending school. The message

is clear: when major labor market adjustments are required, like the absorption of the large numbers of young people during the 1970s, the poor or those with other disadvantages have the least chance of making that adjustment successfully. Further, when potential workers have few basic skills and little experience and when the minimum wage and other institutions create wage floors, the result can be unemployment or part-time employment rather than full-time but lower-wage employment. The Administration's targeted jobs tax credit is an employment subsidy designed to deal with these problems.

Unwarranted differences in the experiences of different groups imply that there has been failure in the labor market, and the Humphrey-Hawkins Act places special emphasis on reducing such differences. While it is not possible to establish detailed employment and earnings goals for disadvantaged youths, older displaced workers, the handicapped, women, Hispanics, veterans, and other such subgroups, the specific goal can be set forth: to reduce unemployment and raise earnings for all these groups. Equality of unemployment rates among all demographic groups is not an appropriate objective, of course, since it would fail to recognize differences in employment needs. For example, young people searching for better careers and not greatly attached to any job should not be expected to have the same unemployment rates as older experienced workers. But structural policies are needed to reduce unjustified disparities among groups, and especially to lower unemployment among those with the most acute problems and those handicapped by childhood poverty. Labor market differences based on factors which do not affect productivity or reflect variations in tastes for work and type of job search should be eliminated.

Another group for whom labor markets may not work adequately is older, more experienced workers whose long-time jobs disappear. Workers with skills specific to the needs of a particular firm often have to accept lower wages when they must seek another job. In a dynamic economy where the fortunes of individual firms wax and wane, these problems are continual. If they are concentrated in a major industry or in a large firm, they often become issues for government to deal with.

Problems in adjustment will continue in the 1980s as the labor market responds to changes in energy sources, in patterns of international trade, and in other economic factors. While no general rule will serve every occasion, the goals of raising productivity and improving living standards are best achieved if governmental policy is designed to aid the flow of human resources from obsolescent and lower productivity uses to new and more productive ones.

Although there are some general principles for dealing with displaced workers possessing firm-specific skills, applying them to particular cases is not easy. It is difficult to tell in advance which displaced workers will have trouble. For example, a study of workers who had been laid off and were eligible for aid under the Trade Adjustment Act in 1978 showed that about three-fourths eventually returned to their previous place of employment. In the same period a sample of unemployed manufacturing workers receiving unemployment insurance showed that 58 percent eventually returned to their previous jobs.

POLICIES TO AID LABOR MARKETS

The labor market is sufficiently flexible that it can adjust to most of the pressures of the 1980s without special assistance. Governmental policy still has a role, however, in easing the adjustment for some workers. This cannot be accomplished through aggregate demand policy alone, because attempting to do so would merely add to inflation while yielding only minimal benefits for the groups suffering especially from unemployment. Active labor market policies directed at the structural unemployment of particular groups or at specific rigidities in the market are thus called for.

Nearly 5 percent of the Federal budget goes to education, training, and employment programs, many of which are aimed directly at increasing employment. These include public service jobs (some 450,000 such jobs will be funded in 1981); a new targeted jobs tax credit giving subsidies to firms hiring the disadvantaged; antidiscrimination efforts of the Equal Employment Opportunity Commission and the Office of Federal Contract Compliance; the new Presidential directive expanding the hiring of disadvantaged workers in private sector jobs through Federal economic development programs; and flexitime experiments and employer technical services of the U.S. Employment Service that help restructure jobs to fit workers' needs. Complete evaluations of most of these programs are not yet available. Some of them may prove effective on a small scale but may not work so well on a larger scale.

Programs to create public sector jobs provide an example of some of the difficulties faced by structural labor market policies. Such public jobs programs have three consequences which must be considered: First, the existence of such jobs may attract such large numbers of people into the labor force that the reduction in unemployment is significantly less than the increase in employment. (To the extent that new members of the labor force were previously too discouraged even to seek work, this would of course be beneficial.) Second, the

jobs may either displace some public sector workers or end up financing existing public sector jobs rather than providing new ones. The limits placed on wages payable in public service jobs in the 1978 Administration-supported amendments to the Comprehensive Employment and Training Act (CETA) and other amendments should eliminate some of the "substitution" problems. Third, such jobs are relatively short-term solutions for individual workers and may only postpone the transition for these workers, without adequately preparing them for unsubsidized employment. To address this problem, the 1978 CETA amendments increased the emphasis on preparing workers for unsubsidized jobs, and the programs were also changed in other ways that should help workers adjust to labor market needs.

Both the Administration and the Humphrey-Hawkins Act recognize that the problems of disadvantaged and minority youth make this group a particularly appropriate subject for structural labor market policy. The Administration has tripled expenditures on Labor Department programs for youth training and employment. In anticipation of the expiration of authority for some youth activities this year and in recognition of the persistent needs of disadvantaged youth, the President's budget contains proposals that will form the basis of this Administration's policies to alleviate the labor market problems of young people in the 1980s. These policies recognize that, especially as the proportion of youths in the population declines, there is no general youth problem; but that employment problems are likely to be serious for the roughly 10 percent of young people who are poor and suffering long-term unemployment. Not all of them require government help, but many do. The decline in young people's share of the labor force should make it more likely that training and job development will help that group.

The President's new policies also recognize that the best time to confront the employment problems of the young is before they leave school and experience long stretches of unemployment. Better and more intensive training in basic skills for junior and senior high school students before they leave school must have high priority if we are to improve their opportunities to find employment. The need to reduce long-term unemployment among labor market entrants is made more urgent because one of its consequences is lower productivity and earnings in later years. Our economy cannot afford to waste such human potential. So far, however, the amount of government money spent on compensatory education for secondary students has been relatively small.

The goals of the President's new initiative are: (1) to teach basic skills in the secondary school to those youths who did not master them in elementary school and who need special help; (2) to provide

part-time employment and training to dropouts willing to undertake extended training to develop skills that will improve their labor market prospects; and (3) to provide intensive long-term training aimed at achieving unsubsidized private sector placements for older youths out of school. Under the proposal the funds will go largely to poor rural areas and central cities, where a lack of basic skills and high unemployment are most serious.

For principal wage earners in low-income families with children, the Administration has sent to the Congress a set of major proposals for welfare reform. One component of these proposals would provide training, help in seeking jobs, and work opportunities for employable persons. The other major component improves the cash-assistance provisions of the welfare system. Together the two parts of the program would provide minimum income for those low-wage earners in need, along with jobs for those who can work. The program is designed to make employment more attractive than cash aid.

Much remains to be learned about the design of effective policies aimed at other groups in the labor market. Perhaps most important, the efficacy of training programs for adult low-income workers is uncertain. The CETA system and other programs provide such workers with both work experience and training. Although a new authority, Title II-C of CETA, can be used for retraining and aiding any displaced worker, most of CETA has increasingly been targeted toward the disadvantaged and long-term unemployed. Evaluations of the training components of such programs show that they have modest positive effects, especially for women. These effects seem to diminish for male participants in the course of time.

Another question in policy design is whether the government or the unemployed workers themselves are better informed about the type of training they need and can most benefit from. If the unemployed workers are knowledgeable about themselves and the market, schemes giving them vouchers for training through either private or public programs should be considered. Some limited experiments using this approach for welfare recipients show promise.

A third issue is the success of programs to help workers relocate. Relocation assistance is a feature of the Trade Adjustment Assistance Act. The concept of providing relocation assistance is sound, but few workers now take advantage of such assistance, and many who do return to their home towns within a relatively short time.

As demographic changes begin to reduce some of the problems in the labor market remaining from the 1970s, significant progress in helping those groups which suffer the worst unemployment problems becomes feasible. By improving the employment opportunities of these groups and by making them more productive, labor market

policies can increase our supply of goods and services, improve our efficiency in using the Nation's human resources, and help people lead more satisfying lives.

INCREASING THE RATE OF CAPITAL FORMATION (Investment Policy Report)

To reach a number of our important economic goals, the share of national output devoted to capital formation will have to increase in the 1980s. Lifting the growth of productivity from the very low levels of recent years will require an accelerated rise in the stock of capital. Environmental and related improvements will also demand large investments. Further, as discussed earlier in this chapter, we will need to invest very substantial sums in developing alternative sources of energy and improving the energy efficiency of the economy. A larger and more efficient capital stock would also help the United States to compete in world markets, improve the foreign trade balance, and strengthen the value of the dollar relative to other currencies in exchange markets.

Because of the importance of capital formation in determining the long-run growth of the economy, the Humphrey-Hawkins Act places considerable emphasis on the performance of business fixed investment. One of the requirements of the act is that an Investment Policy Report be included in each *Economic Report of the President.* The following section touches on the topics specified in the act; relevant matters, such as policies dealing with Federal expenditures, Federal regulation, and international trade, are discussed in more detail elsewhere in this *Economic Report.*

THE ADEQUACY OF RECENT INVESTMENT

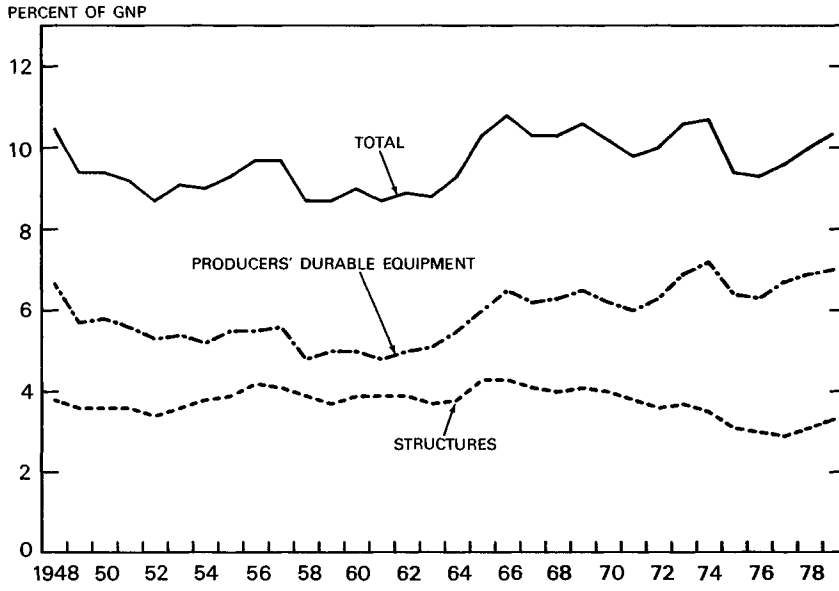
An examination of recent trends in investment raises a number of questions. The fraction of GNP devoted to investment in 1978–79 has approached the shares realized in the late stages of the last two expansions, but this proportion was relatively low during the early stages of the recovery from the 1974–75 recession. Thus the addition to the stock over the past 4 years has been relatively small, especially when the depreciation of the stock during this period is taken into account. At the same time the growth in the labor force was larger than in earlier periods, and hence the rate of growth in the capital stock available per worker fell substantially. Furthermore some of the recent investment has been devoted to meeting increased energy needs and the requirements of environmental, health, and safety regulations. While such investment is important to national goals, it does not directly expand industrial capacity or contribute to meas-

ured productivity. Finally, the composition of investment has been more heavily weighted toward shorter-lived assets than it was in periods prior to the 1974–75 recession.

Since 1974 the share of gross business fixed investment has reached 10 percent of GNP only during the last 2 years (Chart 6). Moreover the 1979 gain occurred despite reduced growth in real investment expenditures; real GNP grew at a still lower rate.

Chart 6

Real Nonresidential Fixed Investment as Percent of Real GNP



SOURCE: DEPARTMENT OF COMMERCE.

Historically it has not been uncommon for the share of such investment in GNP to rise as growth of the economy begins to slow. Similar behavior occurred in 1960, 1969, and again in 1974. The growth of investment does not always coincide with the overall growth of the economy because actual investment expenditures lag the planning and appropriation stages and because expenditures for ongoing projects are not necessarily curtailed in a downturn.

The composition of recent business fixed investment has been quite different from historical norms. In 1979 the share of investment in producers' durable goods in real GNP (7.0 percent) was the

second highest in the last three decades. Both motor vehicles and other equipment attained shares of GNP that approached record peaks for the year as a whole, although purchases of vehicles declined sharply during the course of 1979. In contrast the share of real GNP accounted for by business investment in structures (3.3 percent) continued to be less than that realized in every year between 1947 and 1974.

A variety of causes could be found for the changing strength of the major components of business fixed investment. One is Federal tax legislation, which since 1971 has increased the investment tax credit for equipment while giving structures only partial coverage. Another is that the higher level of inflation in recent years has increased the tax burden on long-lived assets relative to short-lived assets. Uncertainty about future economic conditions and about the outcome of various regulatory processes has intensified, and such uncertainty tends especially to penalize investments in assets with long-term payoffs.

As discussed in Chapter 2, only part of the unsatisfactory productivity of recent years can be blamed on declining rates of capital accumulation. Nevertheless there is little doubt that increased rates of capital formation will improve productivity in the future. Capital accumulation increases labor productivity directly by giving labor more to work with, and some technical advances contribute to productivity growth only when they are embodied in the capital stock.

Investment and Innovation

The last point made in the preceding section takes on special significance in the light of changes in the average age of the capital stock. From 1948 through 1966 the average age of producers' durable equipment and structures fell about 3 years. The average age fell by about 1 year from 1966 through 1973. Since 1973 the average age of business capital has not changed significantly. Because the gap between best-practice and average-practice technology is narrowed when innovations are put in place, modernization of the capital stock is one way to diffuse innovation that will add to productivity. Not all technical progress is embodied in capital, however, and the quality of some new capital may change little. Thus the fact that the average age of the capital stock has remained constant may account for only a small portion of the recent declines in productivity growth.

A Domestic Policy Review, initiated by the President, recently assessed the proper role of the government in fostering industrial innovation. On the basis of this review, the President sent an Industrial Innovation Message to the Congress in which he detailed a number of steps that the Administration had taken or would soon be taking.

Specifically, the President's 1981 budget proposes programs to encourage the development and transfer of technical information and to improve the patent system. The budget also contains proposals to stimulate small businesses devoted to high technology, including direct support to small research and development firms. The President has directed the Small Business Administration to increase further the availability of venture capital to these firms. Finally, also to increase the availability of venture capital, Employee Retirement Income Security Act regulations have already been changed to allow pension funds to invest in small innovative firms.

Federal support for research and development, measured in real terms, fell substantially between 1969 and 1975. In more recent years the trend has been reversed. The Nation's effort in basic research depends on the Federal Government for about two-thirds of its support. The budgets of the Administration have increased that support each year, the increase amounting to 22 percent in real terms between 1976 and 1979. The President's 1981 budget proposal continues that policy.

SPECIAL INVESTMENT NEEDS

Compliance with mandates to improve the environment, health, and safety requires substantial investment. The results of this investment—cleaner air, purer water, and a safer working environment—are not included in conventional measures of output, although they benefit everyone. Investments to meet regulatory requirements are financed from the same sources as investments that directly increase industrial capacity. Thus any given fraction of GNP devoted to investment will yield less measured gain in productivity than historical relationships would suggest. Meeting requirements of the Clean Air and Water Acts alone is estimated by the Environmental Protection Agency to have absorbed 5.6 percent of business fixed investment, or 0.6 percent of GNP, in 1977. Over the decade of the 1980s the investment required to meet existing environmental regulations alone is expected to average 0.3 to 0.6 percent of GNP. To the extent that new regulations are imposed, the share of GNP used may be larger.

The additional private investments directly attributable to increasing and diversifying our domestic energy supplies and improving energy efficiency will also be substantial. The requirements outlined earlier in this chapter, including those stemming from the national energy program, will add the equivalent of about 1 percent of GNP to investment needs. There will be other indirect investment requirements. Since rapidly rising energy costs increase the rate at which the capital stock becomes obsolete, replacement investment must also rise if a reduction in the Nation's productive capacity is to be avoided.

Even without the special investment needs of energy and the environment, it is difficult to imagine that healthy economic growth could be maintained by a ratio of business fixed investment to GNP of less than 10 percent. The direct investment requirements for increased energy supplies, plus environmental regulations currently on the books, could raise this to over 11 percent. Finally, depending upon how much investment will be required by new environmental regulations and by the need to accelerate the replacement of industrial facilities made obsolete by higher energy costs, the necessary investment ratio may be higher still. Achieving this level of investment will not be easy; the highest share attained by the economy in the postwar period was 10.8 percent in 1966.

SAVING-INVESTMENT RELATIONSHIP

The basic saving-investment relationship as measured in the national income and product accounts is presented in Table 23. The reported values represent the amount of gross saving by the household, business, and government sectors, along with gross investment by type of expenditure. Household saving equals disposable personal income less personal outlays, which consist mainly of personal consumption expenditures. Business saving is defined as retained earnings plus depreciation. The government sector's contribution to national saving depends on the budget surpluses or deficits of Federal, State, and local governments. The government sector adds to national saving when a combined budget surplus is recorded.

Gross investment consists of domestic investment and net foreign investment. Net foreign investment is conceptually similar to the current account deficit in the balance of payments, with a surplus in the current account corresponding to positive net foreign investment. As Table 23 shows, saving and investment as fractions of GNP have increased in the last 2 years, although they remain slightly below the values of the 1965–69 period.

Whether business investment will grow enough to meet the country's needs in the 1980s will depend on two key questions. Will investment incentives be sufficient to bring the demand for business capital goods up to the necessary level? And will the share of national saving in GNP expand to permit that investment demand to be realized without adding to inflationary pressures on the economy? While the two questions are related—since additional saving tends to lower long-term interest rates and encourage investment demand—it is useful to examine each of them separately.

TABLE 23.—*Gross saving and investment as percent of GNP, 1965–79*

[Percent]

Item	1965–69	1970–74	1975–77	1978–79 [1]
Gross saving [2] [3]	15.8	15.1	13.8	15.3
Personal	4.4	5.0	4.2	3.2
Business	11.6	10.5	11.9	11.8
Government	−.2	−.5	−2.3	.3
Federal	−.3	−1.2	−3.3	−.8
State and local	(4)	.7	1.0	1.2
Gross investment [3]	15.8	15.3	14.2	15.5
Nonresidential fixed	10.5	10.2	9.8	10.6
Residential fixed	4.0	4.5	4.1	4.9
Change in business inventories	1.3	.8	.4	.9
Net foreign	.1	−.3	−.2	−.9
Statistical discrepancy	(4)	.2	.4	.2

[1] Preliminary.
[2] Includes net capital grants received by the United States, not shown separately.
[3] Saving and investment may not be equal due to rounding.
[4] Less than 0.05 percent.

Source: Department of Commerce (Bureau of Economic Analysis).

DEMAND FOR NONRESIDENTIAL FIXED CAPITAL

Future trends in capital formation will reflect both past and future investment incentives. Last year's *Economic Report* discussed many of the factors which appear to influence business decisions to invest. Table 24 presents data for a number of these factors.

Preliminary data for the year 1979 as a whole do not indicate a clear pattern. Two of the measures shown—capacity utilization and the rate of return on stockholders' equity—rose and were above their average levels for the 1955–69 period. The other three declined and

TABLE 24.—*Determinants of business fixed investment, 1955–79*

[Percent, except as noted]

Period	Ratio of real investment to real GNP	Capacity utilization rate in manufacturing [1]	Nonfinancial corporations			
			Cash flow as percent of GNP [2]	Rate of return on depreciable assets [3]	Rate of return on stockholders' equity [4]	Ratio of market value to replacement cost of net assets [5]
1955–69 average	9.5	84.2	9.4	12.9	6.4	1.097
1970–77 average	10.0	80.9	8.3	9.4	6.4	.871
1978	10.0	84.4	8.8	9.7	7.1	.678
1979: First 3 quarters [6]	10.4	86.0	8.5	9.2	7.7	.654

[1] Federal Reserve Board index.
[2] Cash flow calculated as after-tax profits plus capital consumption allowance plus inventory valuation adjustment.
[3] Profits before taxes plus capital consumption adjustment and inventory valuation adjustment plus net interest paid divided by the stock of depreciable assets valued at current replacement cost.
[4] After-tax profits corrected for inflation effects divided by net worth (physical capital component valued at current replacement cost).
[5] Equity plus interest-bearing debt divided by current replacement cost of net assets.
[6] Seasonally adjusted.

Note.—For annual figures for 1955–77, see Appendix Table B–85.

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

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were below their 1955–69 averages. The steady increases in capacity utilization rates since the 1974–75 recession reflect the strength and duration of the subsequent recovery as well as the relatively slow accumulation of additional industrial capacity. The rate of return on stockholders' equity also rose (see Table 24). However, this increase is not a good measure of the change in the rate of return available on new equity investments, because it stemmed largely from unanticipated increases in inflation which reduced the real burden of corporate debt. The slowdown in the growth of profits in 1979 contributed to the declines in the rate of corporate cash flow and the rate of return on depreciable assets. The ratio of market value to replacement cost of net assets declined even further from its low 1978 level as inflation pushed the replacement cost of physical capital well beyond the market value reflected in equity and debt prices. All of the investment determinants except the ratio of market value to replacement cost of net assets and the return to depreciable assets were above 1970–77 averages, but these averages themselves were equal to or below those of the 1955–69 period.

Federal tax policy has an important influence on business fixed investment. The Revenue Act of 1978 lowered the corporate tax rate across all income classifications. The investment tax credit was made permanent and was extended to a broader range of investment expenditures. The tax rate on capital gains was also reduced by allowing a larger proportion of capital gains to be excluded from an individual's taxable income.

While these reductions in tax rates were occurring, the increase in inflation tended to raise the tax burden on businesses. During periods of rising inflation the real tax burden increases because depreciation allowances are based on historical costs rather than on replacement costs. Partly for this reason, the ratio of Federal corporate income taxes to profits measured on an economic basis was higher in 1979 than in 1978 despite the reduction in the corporate income tax rate which took effect in 1979. Since long-lived investment goods suffer larger declines in the real value of depreciation allowances over time, inflation distorts both the amount and composition of investment.

THE SOURCES OF SAVING

In periods of economic slack the production of additional capital goods does not require a reduction in the output of consumer goods. In fact the expansion of wage income from the increase in output of investment goods will lead to a simultaneous rise in the demand for and the production of consumer goods.

In periods of relatively high employment, however, the growth of national output is limited to the 2½ to 3 percent rate given by the growth in potential GNP. Investment can grow more rapidly only if its share in GNP rises, which in turn requires an increase in the share of GNP that is saved. In order to increase the share of investment in GNP during the 1980s, therefore, total saving will have to rise relative to GNP. Saving frees resources for use in the production of capital goods and provides the flow of funds needed to finance investment outlays. The amount of saving by governments, business firms, and individuals is thus the major determinant of the amount of total investment that can be undertaken. About one-fourth to one-third of national saving in the past has been absorbed by residential construction. The bulk of the remainder is available for business capital formation.

Recently, as the Federal Government's deficit has narrowed, Federal Government dissaving has declined. The Federal deficit (as measured in the national income and product accounts) has declined in every year since 1975 from an average of 3.3 percent of GNP in 1975–77 to 0.8 percent in 1978–79 (see Table 23).

Gross saving in the State and local government sector averaged 1.2 percent of GNP during 1978–79. The bulk of this saving was from net additions to the surpluses of social insurance and pension funds. Last year the operating budgets of State and local governments were approximately in balance. The combined budgets of Federal, State, and local governments recorded a net surplus in 1979, the first such surplus since 1973.

In contrast to the recent changes in governmental budgets toward positive net saving, the personal saving rate has declined substantially in recent years. For 1979 as a whole, the rate was 4½ percent; it was even lower by year end. A number of contributing factors have been cited as causes of the recent low saving rate. These include the high proportion of the work force consisting of younger people, the increased number of two-earner households, and—in 1979—the efforts of consumers to maintain real consumption in the face of slow growth in real income. In addition, inflationary expectations in conjunction with low rates of return on financial assets, low real borrowing costs, and the ready availability of credit may have reduced the personal saving rate by increasing the attractiveness of real assets relative to financial assets. The relative importance of these factors to the decline in the saving rate is uncertain.

Business saving—retained earnings plus depreciation—grew at a rate of 9.2 percent in 1979, down moderately from the growth of recent years. Historically the rate of growth of business saving has var-

ied substantially; the most recent figure is well within past ranges. Because business saving is an internal source of funds to finance expenditures on physical capital, policies designed to increase business saving also tend to have a direct impact on business fixed investment. The Revenue Act of 1978 strengthened this source of corporate financing by lowering the corporate income tax rate.

CAPITAL MARKETS AND THE AVAILABILITY OF CREDIT

Financial markets and institutions play a major role in linking saving and investment. The business sector finances a significant portion of its long-term investment expenditures through such financial intermediaries as insurance companies and pension funds. Direct purchases of new equities and corporate bonds by households have recently been only a minor source of financial capital for businesses. In 1978, for example, the nonfinancial corporate business sector raised $20.1 billion in the corporate bond market, while the household sector reduced its net corporate bond holdings by $1.4 billion. Indirectly, however, workers and other individuals constitute an important source of business funds through pension funds and other forms of group saving.

During most of 1979 businesses had little difficulty in obtaining credit. Total financial capital raised by the nonfinancial business sector rose by an estimated 17 percent in 1979. Short-term debt was an unusually important source of the business sector's financing. Businesses preferred shorter-term issues because it was thought throughout most of the year that longer-term rates were at or near their cyclical peaks and would decline in the near future. In fact long-term rates rose sharply during 1979, but this increase had not been widely anticipated.

To help ensure that financial capital is available to businesses in the future, the Administration is systematically reviewing Federal credit activities. In the budget for fiscal 1980 the Administration announced the development of a program to establish a credit-monitoring system which covers direct lending by agencies as well as guaranteed loan programs. The 1981 budget recommends limitations on annual appropriations for a wide range of activities involving Federal credit. This new monitoring system includes both on- and off-budget Federal loan and loan guarantee programs. Although some programs are exempt, this review will lead to a more efficient allocation of both credit and real resources.

The availability of financial capital in the future will be maintained by improving the economic environment in the United States, as outlined in this chapter, and by selective policies designed to meet the

needs of small businesses for financing. Through the continuing efforts of the Small Business Administration and the programs included in the President's proposals to foster industrial innovation, more credit will be available to small businesses. For the economy as a whole, a reduction in inflation will enable monetary policy to ease, thereby improving the flow of funds in financial markets.

SOME LIKELY PATTERNS OF NATIONAL SAVING IN THE 1980s

Table 25 illustrates a pattern for national saving that seems possible under a set of reasonable assumptions for the 5-year period 1982–86. The Federal budget is assumed to be balanced on average over the period. Continued control over spending should make it possible both to reduce taxes during the period and to have a balanced budget in most of those years. State and local governments are likely to continue, on average, the surpluses of recent years which stem from an excess of revenues over expenditures in pension and related funds for their own employees. Business saving will probably remain close to historical trends in the absence of future business tax cuts, and the personal saving rate is assumed to increase to slightly above its 1975–79 average. In sum, total domestic saving as a proportion of GNP can be expected to rise slightly in the 1982–86 period compared to recent years. But the inflow of investment from abroad, which is the financial counterpart of the U.S. current account deficit, should move toward zero as market forces bring receipts and expenditures in the current account close to balance. The share of GNP used for housing will increase slightly because of the energy requirements discussed earlier in this chapter. With inventory investment taking about the same share of saving as in the recent past, the

TABLE 25.—*Actual and illustrative saving-investment balances*

[Percent of GNP]

Item	Actual 1975–79 [1]	Illustrative 1982–86
Federal Government surplus	−2.2	0
State and local government surplus	1.1	1.0
Gross business saving	11.8	11.5
Personal saving	3.8	4.0
Equals: Total saving	14.5	16.5
Less: Net foreign investment	−.5	0
Residential fixed investment	4.5	4.8
Inventory investment	.6	.7
Equals: Saving available for business fixed capital formation	9.9	11.0

[1] Preliminary; detail may not add to total because of rounding.

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

amount available for business fixed investment should be about 11 percent of GNP.

It was estimated earlier that to improve productivity, expand capacity, make the adjustment to higher energy costs, and meet environmental needs the ratio of business capital formation to GNP would have to rise to at least 11 percent and possibly somewhat higher. The earlier discussion of factors underlying the demand for investment goods and the analysis of saving ratios in Table 25 suggest that specific measures to increase investment and saving may be needed in later years.

THE PROSPECTIVE POLICY MIX

Inflation and economic growth tend to increase average effective tax rates and thus the share of Federal taxes in GNP. Under current inflationary conditions, and given the uncertainties in the economic outlook, the highest priority in the use of additional Federal revenues is to reduce the budget deficit. This is the policy incorporated in the President's 1981 budget proposals. However, continued control of Federal spending will make possible tax reductions in future years that are quite consistent with the maintenance of an appropriate degree of fiscal restraint. Considering the need for additional investment incentives, the design of future tax reductions should give a high priority to measures which strengthen investment.

Policies will also be needed to increase the amount of available national saving. One way to do so is to have smaller tax reductions and run a Federal budget surplus. A budget surplus would increase national saving and thereby provide additional sources of funds for investment. Alternatively, some of any potential budget surplus could be used to reduce taxes in ways which increase the after-tax return to personal saving. There is considerable uncertainty about the likely size of the response of personal saving to increased after-tax returns. It is clear, however, that each dollar of such tax reduction—which lowers the potential Federal surplus (and hence total national saving) dollar for dollar—will yield at most a small fraction of a dollar in additional personal saving.

Tax reductions devoted explicitly to business firms in the form of increased investment incentives, on the other hand, will tend to increase both business saving and investment. While some part of a business tax reduction will go toward higher dividends, a fairly large fraction of it is likely to end up as increased retained earnings.

The fact that an increase in the ratio of saving to GNP may be necessary to make possible the desired expansion of investment does not imply, of course, that increasing the saving share will itself guarantee

a rise in investment. A higher saving share will tend to reduce real interest rates and thus encourage investment. But that alone may not be sufficient. An overall economic climate with inflation being steadily reduced and output growing at a sustainable pace would be very conducive to investment. It may be necessary also, as fiscal drag allows statutory tax rates to be reduced, to provide a significant part of the reduction in forms which both raise the return to investment and increase business saving.

ADJUSTING TO EQUILIBRIUM IN AGRICULTURE

During the past decade the role of U.S. agriculture in the national and international economy changed dramatically. This change has important implications for inflation, agricultural productivity, and the long-term performance of the farm sector.

Historically agriculture's productive capacity increased so rapidly relative to demand that national agricultural policy had to concentrate heavily on protecting farm income from the consequences of overproduction. But rising world population, increased consumption of animal products, and the improved capability of some developing nations to purchase food and feed grains—combined in the last decade with dollar devaluations and global crop shortfalls—now require nearly full use of the land, labor, and capital available to agriculture. Measured in constant dollars, this sector's total exports have increased more than 60 percent since 1972. U.S. agriculture appears closer to resource equilibrium than it has been for many decades.

This situation is likely to persist. While year-to-year fluctuations in weather, world economic performance, or even international affairs may result in potentially troublesome periods of excess production, the longer-term outlook strongly suggests that production will more typically be at or near capacity. Growth in world population and improved economic conditions in both developed and developing countries will increase their need for and improve their capability to purchase food and feed grains.

POLICY ISSUES

The United States is now more vulnerable to agricultural price and income fluctuations arising from changes in worldwide demand for U.S. farm products than it was in the past. Sustained full use of farmland, for example, makes it more difficult to increase output in response to successive world crop shortfalls. Then too, as exports are expanded, U.S. agriculture becomes even more closely linked with

world weather and the domestic policies of other nations. Since little can be done to influence these factors, domestic agricultural policies must operate to cushion the sector and the Nation from the price and income shocks that they would otherwise experience. Reducing this vulnerability while improving the sector's productivity and economic performance is a major objective of the Administration's food and agricultural policy.

Supply Shocks

The total demand for food is so inelastic that small changes in global food supply can lead to very large changes in price. And because the supply cannot be increased quickly, year-to-year price changes do little to alter the quantity offered for sale; rather they increase the potential for generating oscillations in price and production. Widespread crop shortages can set off a general inflationary surge. Bumper crops can reduce market prices below what is needed to cover variable operating expenses. These characteristics, combined with the fact that food is a basic raw material, leave us exposed to abrupt price changes in the food sector.

A clear demonstration that small variations in global food supply can lead to wide variations in producers' incomes and food prices was furnished by the events of 1972–74. World food production declined only about 2 percent globally in 1972. This modest decline led to an increase of 54 percent in U.S. crop prices in 1973 and to another 28 percent increase in 1974. Consumer food prices increased 31 percent over these 2 years. Net farm income was a record $33.3 billion in 1973, 78 percent higher than in 1972.

The rise in grain prices touched off the most rapid liquidation of the domestic cattle herd ever recorded. Cattle prices fell as cattle marketings increased during 1975 through 1977. Grain prices also fell during the period, a consequence of increasing world stocks. In 1976 net farm income was about equal to its 1972 level. Beginning in 1978, food prices rose, reflecting strong consumer demand and the cut in meat supplies that resulted from the earlier slaughter of breeding herds. During 1978 and 1979 retail beef and veal prices increased more than 50 percent.

Price and Income Support

Government programs in the past have increased farm income by raising commodity prices. These artificially high price supports often interfered with adjustments in production and agricultural trade flows; farmers frequently based decisions on government price guarantees rather than on basic forces of demand and supply. Production

often exceeded market needs at government-supported prices, and government stocks began to accumulate. As a result, quotas and acreage allotments were adopted to control output. Agriculture was justifiably cited as an example of the inefficiency created by government interference in private markets.

The Agriculture and Consumer Protection Act of 1973 (see the 1974 *Economic Report* for detail) represented a significant change in the philosophy underlying government support of farm incomes through commodity programs. For major crops the price support mechanism was augmented by a system of direct income payments under which market prices are allowed to fluctuate in response to supply and demand, thereby promoting a more efficient allocation of agricultural resources among the crops. By this means consumers and grain-using producers can benefit from lower prices when harvests are large. When market prices fall below legislatively determined targets, farmers receive direct income payments to make up for the income lost through the lower prices.

While the 1973 act changed the way incomes were protected, the primary focus was still on the problem of low incomes. The act made no provision for cushioning farmers and consumers from the effects of instability resulting from increased reliance on market prices. It was generally believed that the rapid price increases of 1973 were largely an aberration and that sufficient commercial grain stocks would be available in the future to moderate the price fluctuations associated with occasional crop failures. Only in the years that followed did the inflationary consequences of a continuing policy of placing sole emphasis on minimum income protection become clear.

Agricultural Productivity

A sustained and nearly full use of agricultural resources requires giving more attention to policies that improve the sector's productivity. Crop production per acre increased at an average annual rate of 2.4 percent from 1953 to 1973. Since then the average rate has been about 1.1 percent per year. Without the excellent growing conditions in 1978 and 1979, which pushed yields per acre well above the trend, the rate of increase would have been below 1 percent per year.

The greater use of marginal lands during this decade has undoubtedly contributed to the slower increase in crop production per acre. After steadily declining for more than 20 years, the number of crop acres harvested increased significantly in 1973. This number has remained at about the 1973 level, despite the occasional use of acreage set-asides since then. The rise in agricultural exports has been a significant factor in increased land use. Today one-third of the U.S.

crop acres produce for export, 40 percent more than in the 1960s and 120 percent more than during the 1950s.

Continued intensive use of cropland will lead to a depletion of soil and water resources unless specific resource management schemes are employed. These improved farming practices are becoming even more crucial to productivity improvements because the migration of labor from the sector has slowed and because prices for fuel and fertilizer are climbing.

THE ADMINISTRATION'S AGRICULTURAL POLICIES

In January 1977 world grain stocks and prices were returning to pre-1972 levels. The domestic cattle herd was being liquidated at a rapid rate, and retail meat prices were lower than in 1976. Net farm income had fallen 44 percent from 1973. Sentiment was growing for a reinstatement of farm programs designed to support producers' incomes through higher commodity prices. It was uncertain whether the 1972–75 situation was an aberration or a signal that price and income stability would have to be the major consideration in future farm policy.

The Administration, believing that conditions had indeed changed, worked with the Congress in developing the Food and Agriculture Act of 1977. That legislation and the policy directions it implied became the basis for a broad range of food and agricultural programs to protect farmers' incomes while supporting the principle of full-capacity production and increased reliance on market prices.

Grain Reserves

In a major departure from past policies the Administration's programs went beyond minimal income protection for grain farmers and established a farmer-owned grain reserve. Using existing authority and the Commodity Credit Corporation (CCC) loan program, the Administration announced the implementation of a farmer-owned wheat and rice reserve in April 1977. CCC loans on the 1976 crops were extended and farmers received government payments for crop storage. They were allowed to repay the loans without penalty whenever the market price reached 140 percent of the loan rate on the crop.

In August 1977 the Administration announced its plan to establish reserves of 30–35 million metric tons of food grain (wheat and rice) and feed grain (corn, sorghum, barley, and oats). Most were to be owned by farmers, but a small government-owned food reserve was also planned.

Passage of the 1977 Act formally authorized these reserves. It mandated the farmer-owned wheat reserve with essentially the same op-

erating rules as those announced earlier by the Administration. The act also provided broader authority for incentives to use the farmer-owned reserve to store crops. It authorized a reserve for feed grains as well and provided low-interest loans to expand facilities for grain storage at the farm. By October 1979 more than $1.3 billion in loans were outstanding to farmers for constructing such facilities.

The Administration achieved its goal for the level of reserve stocks in less than 2 years. By early 1979 more than 11 million metric tons of wheat and 20 million metric tons of feed grains had entered the reserve.

Explicit rules now govern release of the grain from the reserve. Farmers may not redeem loans or sell the reserve stocks within the contract period (generally 3 years) without penalty unless market prices reach a certain percentage of the loan value. If they do, the reserve is "released"; that is, the government ceases storage payments and farmers are allowed (but not required) to repay the CCC loan and sell their reserve stocks. If the market price reaches a higher percentage of the loan rate the loans are "called"; farmers are required to repay the CCC loans or forfeit the grain. This program thus makes it less likely that grain prices will rise significantly above the call price, because grain is released from the reserve in stages.

The combination of the call price and the loan rate establishes a known corridor of market prices. Price movements within that range allocate resources among crops but the probability of excessive fluctuations which disrupt planning and increase volatility in agricultural production is much reduced. This arrangement helps to make the Nation less susceptible to the inflationary effects of crop shortages.

The first test of how well the managed reserve concept could weather a period of tight supplies occurred in the spring of 1979. Late plantings in the United States and most of the rest of the Northern Hemisphere increased the likelihood that 1979 would bring a poor harvest. Reports of a potentially serious production shortfall in the Soviet Union added to this possibility. The farm-level price of wheat rose 16 percent between mid-May and mid-June alone. Feed grain prices also increased rapidly.

Even with the prospect that world carryover stocks might decline more severely than in 1972, a rapid rise in grain prices was avoided.

The price increases in late spring brought the wheat and the feed grain reserves into release status. At that point the government ceased storage payments and farmers were allowed to withdraw grain from the reserve without penalty. By mid-October 40 percent of the wheat and sorghum and more than 25 percent of the corn had been withdrawn. As this grain came into the market the price increase

slowed. As a result, producers of hogs, poultry, and dairy products could continue to expand their output, and cattle producers could continue to rebuild their breeding herds.

The suspension of sales of agricultural products to the USSR in early 1980 will provide yet another test of the grain reserve concept. Normally such an action would have substantially reduced farm prices. In announcing the trade suspension the President assured the Nation that the burden of that action would not fall unfairly on the agricultural sector. Shortly thereafter the Administration stated that the farmer-owned grain reserve would play an important role in isolating affected commodities from the market. To remove the immediate price-depressing effect of the Soviet grain suspension, the CCC offered to assume the contractual obligations for the unshipped grains. Simultaneously the Administration announced that the rules governing the reserve were being changed to encourage farmers to place grain in storage. These two actions were expected to reduce the level of free stocks and counter downward pressure on prices. Then, as prices firmed, the government-secured grain could be sold back to the market, thus keeping season-average prices little changed. The flow of grain into reserve stocks would support prices over the current crop year and serve as a buffer against future crop shortfalls. The central role assigned to the use of farmer-owned reserves in this case underlines their usefulness as a major tool for cushioning supply shocks in the farm sector.

The reserve can thus be a moderating force on both the upside and the downside. If corn prices had reached $3.50 per bushel in early 1979, as some thought possible, the expansion in the cattle-breeding herd would have been delayed. Hog and poultry producers would have begun slaughtering their animals immediately. Total meat production in 1981 and beyond would have been lower than is now expected, and food prices would have been higher. Then too, the early 1980 suspension of agricultural trade with the Soviet Union, in the absence of special policy actions, would have resulted in a significant decline in commodity prices and farm income. Use of the farmer-owned grain reserve coupled with other policy actions will mitigate these impacts. In both cases food prices and farm income will have been stabilized—and, importantly, stabilized around long-term market trends.

International Trade Agreements

The avoidance of excessive price fluctuations in an agricultural sector operating at full capacity with an increased reliance on agricultur-

al exports requires improvements in international trade arrangements. The grain reserve helps to cushion the effects of fluctuations in world trade, of course, but better commodity trade communication between nations is also essential.

Since 1970 the communication process has been made more formal in a number of ways, perhaps the most important being passage of reporting requirements on export sales. The Agricultural Act of 1970 requires that all exporters of major agricultural products report weekly the type of commodity to be exported, the marketing year of shipment, and the destination, if known. The Secretary of Agriculture is then required to publish the compiled data each week following the week of reporting. The law was amended by the Food and Agriculture Act of 1977 to allow the Secretary of Agriculture to require the daily reporting of export sales.

In addition to requiring these regular reports of export trade the Administration has been successful in several other related areas. Completion of the Multilateral Trade Negotiations, ratified through subsequent passage of the Trade Agreements Act of 1979, is one example. In addition, the President's Export Council has been revitalized with a strong subcommittee on agricultural exports. Agricultural trade offices have been opened in several overseas locations, and the rank of the U.S agricultural attaché at important foreign posts has been upgraded. All these actions help to improve our network for international agricultural trade communications.

The Administration has also moved to moderate the volatility in domestic sugar prices. Acting in concert, the world's sugar producers and importers have established a mechanism for balancing world sugar supplies more nearly in accord with market needs. When the International Sugar Agreement is fully operational, we should be less likely to see a repetition of the 450 percent price increase of 1974.

The Meat Import Act of 1979, which provides a new procedure for determining meat imports, is further evidence that price stability in the food and agricultural sector is important to the Administration. Under the predecessor to this legislation allowable meat imports were tied directly to domestic production, and this served to accentuate cyclical movements in the beef industry. Presidents were often impelled to take action that would increase the amount of meat available to consumers and would moderate retail price rises in years when domestic production was low. But even suspension of the quota could not increase total supplies for domestic consumption by much, since most cattle-producing nations are generally at the same phase in the production cycle.

The new authority automatically allows imports to increase when domestic supplies fall. With prior knowledge that the United States will accept greater quantities of imported meat when domestic production declines, producers around the world can act in ways that help to stabilize beef production.

Humanitarian aid has long been an important aspect of U.S. agricultural policy. But when crop prices rose sharply in 1973–75, the food sent to aid the developing nations was substantially reduced, evidencing the need for a policy that would not leave such nations so vulnerable to crop shortages and high prices. As a result the Administration has proposed an International Food Security Reserve, which would isolate about 4 million metric tons of wheat from the market and make it available to developing nations during emergencies. The Congress has yet to act on the legislation. Title III of Public Law 480, the Food for Peace Program, is also a major vehicle of the Administration's policy related to international food aid. Under Title III, qualifying nations are permitted to repay debts for food aid by investing in projects which improve their countries' long-term economic prospects and thereby reduce the future need for emergency food assistance.

FUTURE POLICY PROBLEMS

Significant progress has been made in refocusing food and agricultural policies toward making the Nation better able to withstand shocks in the food sector. Managing full-capacity production with grain reserves and better arrangements for long-term international trade and food aid represent a fundamental shift in policy. But much is still left to be done.

The concept of a farmer-owned grain reserve has been tested, at least to a point, and has proved capable of moderating volatility in grain prices. Important questions must still be answered, however, about its operation and impact on the sector's productivity. There are misgivings about the appropriate size of the reserve and the price-trigger rules. There is also a danger that the target price could eventually be established "too high" and possibly lead to subsequent upward adjustments in both the release price and the call level. If that happens, our grain will become less competitive in world markets, and the flexibility of the reserve policy will largely be negated.

More emphasis needs to be placed on increasing the food and agricultural sector's productivity. Past productivity gains in the sector were aided by the widespread use of relatively inexpensive energy inputs, especially petroleum-based fertilizers, and by the migration of the rural population to the cities. Today, in the face of the world's

growing needs for food, and increased anxiety about inflation, environmental damage, and the energy shortage, other avenues to advanced productivity will probably need to be found. As an example, the Food and Agriculture Act of 1977 provides targeted, competitive grants for studying plant growth, a field where research may disclose many possible ways to improve productivity.

Over the next several years, food prices will continue to command attention. Although rising commodity prices have been a significant cause of past increases in retail prices, programs to stabilize commodity prices by buffering annual fluctuations in production cannot, by themselves, lead to significant reductions in food price inflation. Marketing costs, of which labor costs and the price of energy inputs are major components, account for approximately two-thirds of every dollar spent on food. Long-term progress in lowering the annual rate of food price increases will therefore depend on reducing the underlying general inflation rate.

While we must expect future problems, the accomplishments of recent years in certain key commodity areas have been encouraging. In a relatively brief time the agricultural sector has moved from excess capacity, supported by policies designed to reduce production, to nearly full utilization of the sector's resources, with sales at world market prices. This change in the operation of the sector made the economy more vulnerable to potentially rapid increases in food and commodity prices, such as those in 1972–74. Administration policies in agriculture have aimed at reducing this vulnerability, and the events of the past year are evidence of their promise.