THE ANNUAL REPORT
OF THE
COUNCIL OF ECONOMIC ADVISERS

LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,
Washington, D.C., January 16, 1981.

MR. PRESIDENT:

The Council of Economic Advisers herewith submits its 1981 Annual Report in accordance with the provisions of the Employment Act of 1946 as amended by the Full Employment and Balanced Growth Act of 1978.

Cordially,

Charles L. Schultze
CHAIRMAN

George C. Eads

Stephen M. Goldfeld

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CHAPTER 1

Inflation and Growth in the 1980s

IN THE 1980s THE UNITED STATES will confront a variety of stubborn problems that have developed during the past 15 years. Chief among these problems is one that is shared by most other industrial countries—the persistence of large wage and price increases, even in the face of high unemployment and slack production. This problem poses the single most important challenge to U.S. economic policy—reducing inflation while maintaining a reasonably prosperous and growing economy.

Many other problems are themselves closely related to inflation, either as cause or as consequence. Our Nation's productivity growth has virtually halted in recent years. The era of cheap energy has ended, the world has grown vulnerable to supply disruptions, and the course of domestic inflation and unemployment has become closely dependent on economic and political developments in the oil-rich but politically unstable Middle East. Meanwhile, the struggle to find a proper balance between a clean, healthy, and safe environment, on the one hand, and satisfactory economic growth with lower inflation, on the other, will continue. All of these developments, together with the growing interdependence of the world economy, have set in motion major changes in economic structure, occupational skill requirements, and industrial location that will continue to pose sizable adjustment problems to many industries, communities, and workers.

While the magnitude of these economic challenges is cause for serious concern, it does not warrant pessimism. During the 1970s the U.S. economy performed quite well in many important respects. Over that decade our country outperformed most other major countries in providing jobs for its people (Table 1). Employment grew almost 25 percent as the American economy created jobs not only for millions of youths entering the labor market for the first time but also for millions of women, who found job opportunities in growing numbers. This performance continued through the last years of the decade at an increased pace. While the growth in the number of employed persons was temporarily interrupted by the recession of 1980, the basic performance was virtually unparalleled.

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TABLE 1.—*Changes in employment in major industrial countries, 1970–80*

[Percent change]

Country	To 1980 first quarter from	
	1970	1976
Germany	−3	3
France	4	2
United Kingdom	0	0
Japan	8	5
United States	24	11

Note.—Data are for civilian employment.

Sources: Department of Labor (Bureau of Labor Statistics) and Organization for Economic Cooperation and Development.

Some of the rapid job creation was associated with the low rate of productivity growth, but production also increased rapidly. As shown in Table 2, the growth of industrial production in the United States, both during the decade as a whole and in the last years of the decade, compared favorably with that of other large industrial countries.

TABLE 2.—*Changes in industrial production in major industrial countries, 1970–80*

[Percent change]

Country	To 1980 first quarter from	
	1970	1976
Germany	29	15
France	36	10
United Kingdom	15	9
Japan	56	29
United States	41	16

Sources: Board of Governors of the Federal Reserve System and Organization for Economic Cooperation and Development.

Whatever the problems of the American economy, they do not arise from an inability to generate large increases in jobs and production. But if the challenges raised by chronic high inflation, energy and environmental problems, ebbing productivity growth, and structural readjustment are not faced, the potential for further growth will not be realized.

In recent years the United States has successfully begun to tackle some of its most difficult problems. After years of inaction followed by several years of vigorous debate, and with some painful sacrifices, we have put into place the major elements of an energy program which is already paying dividends in the form of greater energy conservation and improved supply prospects. After decades in which the documented evidence about the greater productivity and efficiency to be gained from economic deregulation had been ignored, this Nation finally acted during the past 4 years to deregulate its airline, trucking, and railroad industries, and major elements of its financial industry. And during the 1980 recession the executive branch and the Congress showed their willingness to maintain the restraint and discipline

needed to control inflation by resisting strong pressures for a hasty and potentially inflationary fiscal stimulus.

As this *Report* will have several occasions to point out, there are no simple and clear-cut answers to the complex economic problems confronting our country. Many of them will yield only gradually to persistent efforts pursued on many fronts. In some cases where our knowledge is particularly uncertain, we may have to try several approaches before finding an effective solution. Nevertheless, the willingness to tackle difficult problems which this country has shown in the last several years provides a reason to temper concern about the seriousness of our economic problems with a belief that they can be met successfully.

The first two chapters of this *Report* examine the major economic challenges identified above and discuss appropriate policies to deal with them. In most instances the Administration has already made specific policy recommendations, and these are reflected here. But in some cases the chapters identify and evaluate additional policy options on which decisions would have been made had this Administration continued in office. The third chapter of this *Report* examines the Nation's general economic performance in 1980 and the outlook for 1981 and 1982, while the fourth chapter turns to issues pertaining to the international economy.

Chapter 1 addresses the broad problem of reducing inflation while achieving satisfactory growth in employment, output, and productivity. It considers selected aspects of both demand-side and supply-side measures. After discussing the history and causes of inflation, the chapter outlines the role and the limitations of demand management policies, examines the special problems of setting and carrying out anti-inflationary monetary policies in a world of high inflation and frequent economic disturbances, and evaluates the potential usefulness of a tax-based incomes policy as a method for reducing inflation. The remainder of the chapter is devoted to supply-side policies and pays particular attention to two subjects: *first,* the importance of increasing the share of the Nation's output devoted to capital formation and the macroeconomic policies necessary to achieve that goal; and *second,* the integration of supply-oriented tax reductions with overall policies of demand restraint.

Chapter 2 deals with major problems in particular sectors or markets. Specifically, it covers six major topics: energy, regulation, banking, agriculture, the labor market, and the generic problems of structural adjustment among industries confronting economic change. Broadly speaking, the policy measures discussed in Chapter 2 are aimed at increasing supply and productivity by improving the efficiency with which particular markets work and adjust to change. Like

the macroeconomic policies examined in Chapter 1, these too are a means of reducing inflation and speeding economic growth.

INFLATION

The Nation has for some time now experienced inflation that would have been unimaginable in earlier days. Although people's lives and the course of business may not, at first glance, appear radically different from what they were in 1960 before the recent inflation began, inflation has taken a very real toll. The uncertainty it has brought with it cannot be measured, but the consequent anxiety has torn at the fabric of our society. People feel less able to mark their progress and fear that the next round of inflation will leave them poorer. In a number of ways—such as introducing cost-of-living adjustments into wage contracts and indexing the benefits of social welfare programs—institutions have evolved to compensate for some of the uncertainty. But these institutions may sometimes only heighten the arbitrary redistribution of income brought on by inflation—redistribution that society often finds undesirable and unfair. In addition to these painful effects, moreover, inflation reduces the Nation's prospects for growth. The reduction may not appear dramatic, but it impairs the efficiency of the free-enterprise system and discourages capital investment, innovation, and risk-taking.

Rising prices, it should be remembered, are not in the aggregate synonymous with a reduction in real income. When prices rise, someone receives the additional revenues. And for the economy as a whole, rising prices have gone together with rising money incomes. But a wage or salary increase comes infrequently and in a large lump, while prices tend to increase all the time. Furthermore, a pay increase may be viewed as uncertain and as a reward for effort, but price increases seem entirely beyond a consumer's control. As a result, a recent wage increase may be forgotten when the grocery bill rises. Thus rising prices are often treated as something that directly lower real incomes, even when in fact for the Nation as a whole they do not. Of course, the resulting anxiety is no less real.

But when the country pays sharply higher prices to foreign oil producers, that does indeed lower its real income. We are poorer because we receive less oil than we did previously for the same amount of money. That would be true whether or not general inflation followed increases in the price of oil. The induced inflation, in the form of generally higher wages, salaries, and prices, is not the cause of the real income decline—the Nation's higher oil bill is.

A similar phenomenon occurs when growth in productivity slows. Slower productivity growth leads to a slower rise in real incomes. A

decline in productivity growth may be accompanied by an unchanged pace of wage and salary increases, in which case inflation will rise. But a slackening of productivity growth may also result in lower wage increases and an unchanged inflation rate. In either case the same slowdown in the growth of real income would have occurred. It was not caused by inflation.

Although some of the simpler notions that associate inflation with real income loss are wrong, high and rising rates of inflation do indeed weaken the Nation's macroeconomic performance. Inflation can contribute to slower growth in productivity by discouraging investment in two ways. First, some evidence suggests that when inflation increases, not only do people's expectations of future inflation rise, but their expectations tend to become much more uncertain. In this climate, expectations depend less on fact and more on opinion, rumor, and subjective perceptions. Innovative investments and other higher-risk economic activities, the seedbeds of future productivity growth, seem even riskier and are less likely to be undertaken. Meanwhile, businesses and households devote increasing effort to shielding themselves from the effects of inflation, often by speculating in nonproductive assets. Second, as discussed later in this chapter, the interaction between inflation and the tax system can indirectly discourage business investment and also affect the types of assets chosen, thereby distorting investment decisions and resulting in a less productive capital stock.

In a market economy the structure of relative prices and costs, and the yardstick of business profits, provide signals to businesses about what to produce, what inputs to buy, and when to buy them. The system responds to changes in those signals—changes in the price of aluminum relative to copper, of glass relative to tin, and in wages relative to prices. But in a period of high inflation, with a consequent increase in uncertainty, it is much more difficult to distinguish signals from random events. It is hard to know to what extent particular wage and price increases simply represent general inflation or are conveying a "real" message. As a consequence, it is easier to make wrong decisions. Inefficiencies grow, and productivity falls.

The uncertainty created by inflation also obstructs the conduct of economic policy. To the extent that high and rising inflation unhinges expectations from reality, the connection between economic policies and their results is attenuated, and the difficulties of policymaking are increased. Inflation itself is then more difficult to control. There is a temptation for macroeconomic policy to make announcements and take measures to impress the markets, but the intangible gains so purchased tend to evaporate rapidly.

Uncertainty is in large part to blame for the damage done by inflation. In addition to causing serious worry among individuals planning their economic futures, uncertainty interferes with the efficient operation of markets and thereby lowers the productive potential of the economy. Although measures to cure inflation may themselves be painful, over the longer term a reduction in inflation will yield rewards in terms of increased productivity growth and real income.

UNDERSTANDING INFLATION

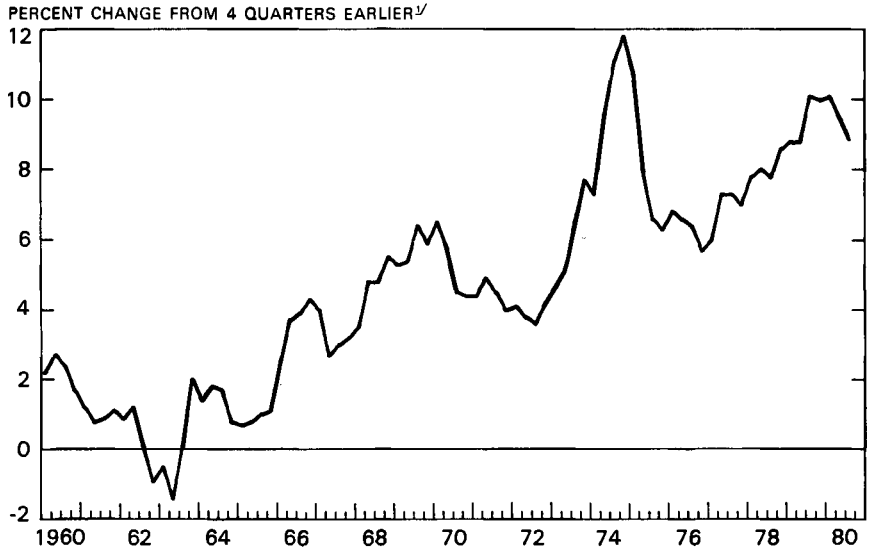
To understand our persistent inflation, it is necessary to look beyond the commonly cited price statistics. Such statistics as the consumer price index (CPI), the various producer price indexes, and the national income account deflators are specialized measures of inflation, each with its own idiosyncrasies. They may be sharply influenced by fluctuations in food and energy prices or in mortgage interest rates and therefore sometimes exaggerate and sometimes understate the fundamental trend of inflation. As an example, in July 1980 the consumer price index showed inflation at zero while the producer price index (PPI) for finished goods showed inflation at an annual rate of almost 20 percent. It is therefore useful to construct measures which better reveal the true course of inflation.

Charts 1 and 2 present two different statistical series which together approximate the basic trend, or "underlying rate," of inflation. The underlying rate is the rate of inflation which today's economy would tend to perpetuate if supply and demand remained roughly in balance and no special factors came into play, such as a large rise in oil or food prices.

Since payments to labor are estimated to account for almost two-thirds of total production costs, prices over the longer term tend to move in conjunction with changes in unit labor costs. Chart 1 shows a special measure of that change—the rate at which wages and fringe benefits are increasing *minus* the trend of growth in productivity. Chart 2 is a version of the price index for personal consumption expenditures calculated by the Department of Commerce. It excludes the volatile components of food and energy. Each series tells basically the same story.

Chart 1

Standard Unit Labor Costs

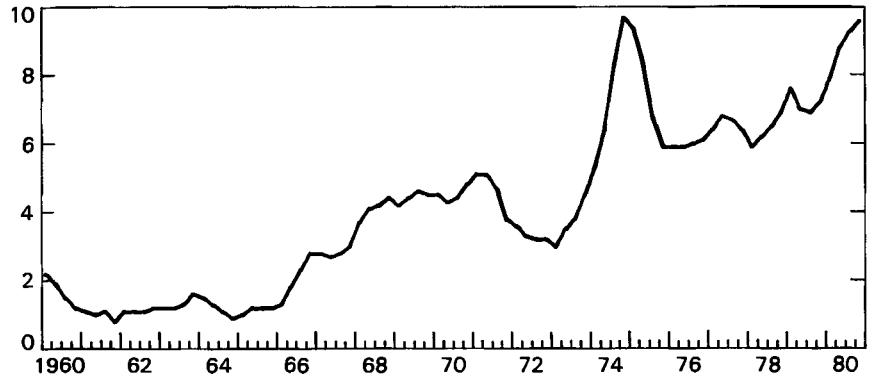


1/ PERCENT CHANGE IN RATIO OF COMPENSATION PER HOUR TO CYCLICALLY ADJUSTED PRODUCTIVITY, PRIVATE NONFARM BUSINESS, ALL PERSONS, UNREVISED.

SOURCES: DEPARTMENT OF LABOR AND COUNCIL OF ECONOMIC ADVISERS.

Chart 2

Price Index for Personal Consumption Expenditures Excluding Food and Energy



1/ PERCENT CHANGE IN FIXED-WEIGHT PRICE INDEX. DATA ARE PRELIMINARY AND SUBJECT TO REVISION.

SOURCE: DEPARTMENT OF COMMERCE.

Over the past 15 years the underlying rate of inflation has risen from about 1 percent in the first half of the 1960s to 9 or 10 percent now. The increase has not been steady. Instead, there have been three major episodes. Each period began with a sharp increase in the underlying rate and ended with the rate falling only part way to its original level. Thus, each new inflationary period has started from a higher underlying level than its predecessor.

The first jump in the underlying inflation rate came during the Vietnam war, when a large rise in both military expenditures and outlays for Great Society programs was financed for several years without a tax increase. This led to a very large Federal budget deficit superimposed on an economy already operating at a high level. The result was a classic example of an excess of demand over supply. The underlying inflation rate rose from about 1 percent in the 1961–65 period to 4 or 5 percent by 1969. By the end of the decade the forces pushing up the inflation rate receded as taxes were belatedly raised and Vietnam war outlays declined. Although the economy entered a recession in 1970, the underlying rate of inflation continued at about 4 to 5 percent until wage and price controls were introduced in August 1971. For a short period the controls held down inflation in prices but did not reduce the growth in costs.

Another inflationary episode began in late 1973 as the result of two major developments. A poor crop year worldwide caused a sharp surge in food prices, and the Arab oil embargo at the end of 1973 was followed by a threefold increase in world oil prices. Although the full impact of the increase in world oil prices was muted in the United States by price controls on domestically produced oil, energy prices and the prices of energy-using products increased sharply. Aggregate demand grew sharply in 1972 and early in 1973. A worldwide boom led to a major inventory buildup and a widely based acceleration of raw materials prices in 1973–74. Finally, the distortions and inequities brought on by wage and price controls created irresistible pressures for easing the controls in 1973 and eliminating them in 1974. When this occurred, there was a burst of price and wage increases.

When this burst receded, the U.S. economy entered its worst recession in 40 years. While the underlying rate of inflation fell back from its late 1974 peak, it did not fall to its starting point. Aside from brief fluctuations, it settled down in the 6 to 7 percent range from 1976 through 1978.

The most recent inflationary episode was triggered when the Organization of Petroleum Exporting Countries (OPEC) raised oil prices in 1979 and early 1980. Relative to the size of the U.S. economy, the recent price increase was larger than the 1973–74 increase. By the

end of 1974 the world price of oil had tripled from about $4 to about $12 per barrel, thereby adding about $18 billion to our bill for imported oil, or roughly 1.4 percent of gross national product (GNP). Since the price of domestically produced petroleum (which at that time accounted for about two-thirds of the petroleum used in the United States) was restrained by controls, the average U.S. price remained lower than prices throughout the rest of the world. Still, domestic oil prices almost doubled, so that the total increase in consumer costs was almost 3 percent of GNP.

During the most recent shock the price of imported oil rose from about $15 per barrel at the end of 1978 to $35 at the close of 1980. This added about $50 billion to the cost of the oil we now import into the United States, or about 2 percent of GNP. Since domestic crude oil prices were in the process of being decontrolled during this period, the price of domestic oil increased by about $15 per barrel, adding another $60 billion to the oil costs paid by consumers.

The forces of inflation during this period were also strengthened to some extent by the behavior of aggregate demand. There was some acceleration of wages in 1978 as unemployment fell sharply. And for a time in late 1978 and early 1979, there appeared to be some excess demand in product markets.

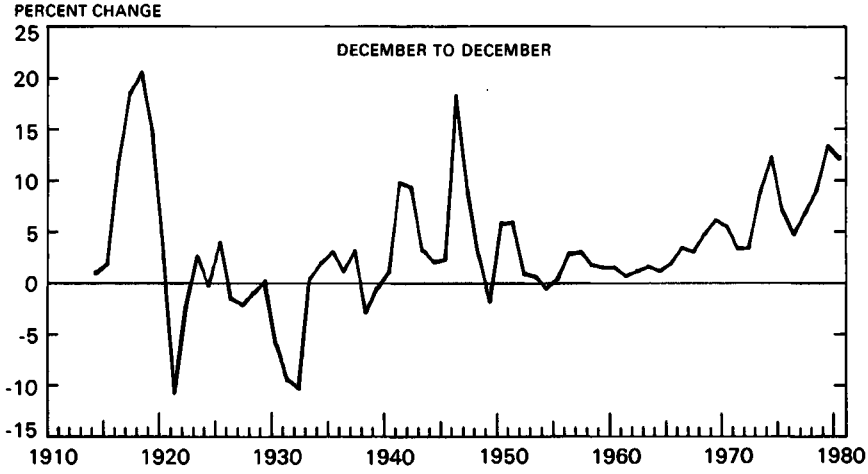
Spurred by these developments, inflation surged in 1979 and early 1980. As measured by the CPI—which was also heavily influenced by sharp increases in mortgage interest rates—inflation reached annual rates of 15 to 20 percent in the first quarter of 1980. By the spring of 1980 the forces that had given rise to this inflationary episode subsided, and the economy entered a brief recession. The measured inflation rate receded from its peak, but the underlying rate appears to have leveled off in the 9 to 10 percent range, up several notches from the 6 to 7 percent level at which the period had started.

THE SOURCES OF INFLATION

The chief problem with respect to inflation is not the sporadic developments that generate inflationary impulses. Instead, it is the ratchet-like nature of the inflationary process which makes it resistant to downward pressures. Chart 3, which shows year-to-year changes in the consumer price index since 1913, captures the essence of the inflation problem of the past two decades. The size of the inflationary bursts of recent years has not been out of line with those which occurred earlier in the century, but recent inflation has had an upward bias and has fluctuated around a rising trend line. An understanding of the "causes" of inflation must therefore encompass not only the various factors that give rise to particular inflationary episodes but also the reasons why inflation has developed a ratchet-like character.

Chart 3

Changes in Consumer Prices Since 1913



NOTE: PERCENT CHANGE FOR 1980 IS FROM DECEMBER 1979 TO NOVEMBER 1980 AT A SEASONALLY ADJUSTED ANNUAL RATE.

SOURCE: DEPARTMENT OF LABOR.

The Role of Aggregate Demand in Creating Inflation

The inflation rate which occurs in any given year is a composite of the individual wage and price decisions made by millions of businesses, unions, and workers. Those decisions are influenced by the strength of demand relative to supply. As demand (or spending)—on the part of consumers, business, and government—declines relative to supply, there is pressure on workers to moderate their wage demands lest employment fall, and on producers to restrain prices for fear of losing sales. The converse also holds true: the smaller the number of unemployed people and the lower the amount of unused industrial capacity, the greater the upward pressure on wages and prices. Some evidence also suggests that a rapid rise in demand can generate upward pressure on both wages and prices, even if the level of demand is not excessive. In general, if demand is in rough balance with supply, the underlying rate of inflation for the economy as a whole will remain basically unchanged, even though prices and wages in individual sectors may fluctuate in response to conditions in particular markets. If excess demand exists, or if the rate of increase in demand is very large, the underlying rate of inflation will tend to rise. If aggregate demand falls below supply, some downward pressure will be exerted on inflation.

Expectations about the future state of aggregate demand are also an important determinant of inflation. Wage decisions and many

price decisions cannot easily be reversed. Wages are often set for at least a year, and under most major union contracts they are set for 3 years. There are also many advantages to both buyers and sellers in avoiding frequent product price changes. As a consequence, decision-makers have to think not only about market conditions at present but also about what they are likely to be in the future. Thus, both current and *expected* aggregate demand influence the rate of inflation. Moreover, a firm's decisions today about what wages to offer or what prices to set for any future period will be conditioned by its expectations about the wages its competitors will pay and the prices its competitors will charge, and by the incomes that will be earned by its customers. In short, today's inflation rate is strongly influenced by what people expect it to be tomorrow.

It was excess aggregate demand during the Vietnam war that drove up the underlying rate of inflation from 1 percent to 4 or 5 percent by the end of the 1960s. Although increases in oil and food prices were the principal causes of the next two inflationary surges, pressures from aggregate demand again played an identifiable role. The most troublesome feature of the inflation of the past 15 years, however, has been the fact that after each of the three inflationary episodes the underlying rate of inflation did not fall back to its earlier level. To what extent was this outcome a demand-related phenomenon?

TABLE 3.—*Selected indicators of declining demand pressures*

[Percent, except as noted]

Item	1969 peak vs 1970 recession		1973 peak vs 1975 recession		1980 peak vs 1980 recession	
	1968 I to 1969 IV	1970 I to 1971 IV	1973 I to 1974 II	1974 III to 1976 IV	1979 I to 1980 I	1980 II to 1980 IV [1]
Average level:						
Manufacturing weekly overtime (hours)	3.6	2.9	3.7	2.9	3.3	2.7
Unemployment rate: Total	3.5	5.5	4.9	7.7	5.9	7.5
Males 20 years and over	2.1	3.9	3.3	5.9	4.2	6.4
Vendors reporting slower delivery	59	49	86	43	60	[2]38
Manufacturing capacity utilization:						
Primary processing industries	88.1	82.6	91.9	79.3	87.5	[2]76.1
Advanced processing industries	85.9	76.9	84.2	76.3	83.9	[2]78.3
Change during period: [3]						
Producer prices for crude materials excluding food and fuel [4]	4.3	1.6	37.0	2.7	26.1	11.8
Unemployment rate (percentage points)	—.3	2.4	—.2	2.6	.3	1.3

[1] Preliminary.
[2] Fourth quarter 1980 not available; November used as fourth quarter average.
[3] Change from quarter preceding start of period shown.
[4] Annual rates. Data prior to 1973 from series seasonally adjusted by Council of Economic Advisers.

Note.—Based on seasonally adjusted data, except vendor performance.

Sources: Department of Labor (Bureau of Labor Statistics), Board of Governors of the Federal Reserve System, Purchasing Management Association of Chicago, and Council of Economic Advisers.

At the end of each inflationary episode the economy entered a recession—in 1970–71, in 1974–75, and in 1980. Unemployment rose steeply, and substantial amounts of idle capacity appeared (Table 3). The failure of inflation to fall back to earlier levels is therefore not attributable to excess demand. On the other hand, there clearly would have been some level of demand low enough to have caused business and labor to moderate the increase in wages and prices substantially so as to return to the earlier level of inflation. But for reasons discussed later, the rate of wage and price increase has become relatively insensitive to a moderate degree of economic slack. As a consequence, the cost of the necessary restraint—in terms of additional unemployment, idle capacity, and lost income, production, and investment—would have been extremely high.

Federal Budget Deficits as a Cause of Inflation

The Federal budget balance at any given time is an important factor in determining the level of current aggregate demand in the economy. If the Federal budget is in deficit, total spending—private and public—will be higher than it would be if taxes had been raised or spending had been cut to produce a balanced Federal budget. Any tax or spending measure that turned a budget deficit into a balanced budget would tend to reduce demand relative to supply and put downward pressure on the inflation rate. Furthermore, since businesses make wage and price decisions at least partly in the light of what they expect market conditions to be, announcements of future budget policies have a strong effect on current economic conditions and on the rate of inflation. Thus budget deficits can contribute to inflation both by being a part of current aggregate demand and by contributing to expectations about future aggregate demand.

The existence of important relationships between Federal budget policy and aggregate demand that in turn affect inflation does not, however, support the simple view that budget deficits cause inflation and that inflation could be eliminated if Federal deficits were eliminated. Federal deficits are not the sole—or even the primary—determinant of aggregate demand. The Federal deficit is likely to be largest when private demand is weak, incomes are low, and inflationary pressures from the private demand side are absent. That is the situation in a recession. In the second column in Table 4, which shows the Federal budget deficit as a percentage of GNP, the effects of recession in 1958, 1970–71, 1974–75, and 1980 show up as large increases in the deficit in the fiscal years during and immediately after the recession. Conversely, a truly inflationary budget may exhibit a small deficit, or even a surplus, as a result of an inflation-caused increase in Federal revenues. In 1969, as inflation was surging, the

Federal budget achieved a surplus. In 1974, when another inflationary surge occurred, the deficit was quite small.

TABLE 4.—*Governmental surplus or deficit and gross national product, 1958–80*

[Amounts in billions of dollars]

Year	Fiscal years—unified budget		Calendar years—government sector, national income and product accounts			
	Federal surplus or deficit (−)[1]		Federal surplus or deficit (−)		Federal and State and local surplus or deficit (−)	
	Amount	As percent of GNP	Amount	As percent of GNP	Amount	As percent of GNP
1958	−2.9	−0.7	−10.3	−2.3	−12.6	−2.8
1959	−12.9	−2.7	−1.1	−.2	−1.6	−.3
1960	.3	.1	3.0	.6	3.1	.6
1961	−3.4	−.7	−3.9	−.7	−4.3	−.8
1962	−7.1	−1.3	−4.2	−.7	−3.8	−.7
1963	−4.8	−.8	.3	.1	.7	.1
1964	−5.9	−1.0	−3.3	−.5	−2.3	−.4
1965	−1.6	−.2	.5	.1	.5	.1
1966	−3.8	−.5	−1.8	−.2	−1.3	−.2
1967	−8.7	−1.1	−13.2	−1.7	−14.2	−1.8
1968[2]	−25.2	−3.0	−6.0	−.7	−6.0	−.7
1969[2]	3.2	.4	8.4	.9	9.9	1.0
1970	−2.8	−.3	−12.4	−1.2	−10.6	−1.1
1971	−23.0	−2.2	−22.0	−2.0	−19.4	−1.8
1972	−23.4	−2.1	−16.8	−1.4	−3.3	−.3
1973	−14.9	−1.2	−5.6	−.4	7.8	.6
1974	−6.1	−.4	−11.5	−.8	−4.7	−.3
1975	−53.2	−3.6	−69.3	−4.5	−63.8	−4.1
1976	−73.7	−4.5	−53.1	−3.1	−36.5	−2.1
1977	−53.6	−2.9	−46.4	−2.4	−18.3	−1.0
1978	−59.2	−2.8	−29.2	−1.4	−.2	.0
1979	−40.2	−1.7	−14.8	−.6	−11.9	.5
1980[3]	−73.8	−2.9	−62.3	−2.4	−34.8	−1.3

[1] Includes off-budget outlays.
[2] A 10-percent income tax surcharge was introduced in July 1968—thus entering calendar year 1968 but fiscal year 1969.
[3] Preliminary.

Sources: Department of Commerce (Bureau of Economic Analysis), Department of the Treasury, and Office of Management and Budget.

If government budget deficits are the cause of inflation, it should make no difference whether the deficit occurs at the Federal, State, or local level. For example, the Federal revenue-sharing program, which grants Federal tax revenues to State and local governments, has the effect of reducing State and local deficits (or increasing their surpluses) by increasing the Federal deficit. If the program were eliminated, but both levels of government continued to tax the same amount and maintain the same level of services, the Federal deficit would be reduced—but the total deficit, and its inflationary consequences, would be unchanged. In fact, principally because the State and local governments accumulate funds to pay employee pension costs, their budgets usually show a surplus. As the figures in the final column in Table 4 show, the combined budgets of Federal, State, and local governments have either showed a surplus or a very small deficit during the past two decades, except during recessions and for 2 years when Federal spending on the Vietnam war was at its peak.

The notion that budget deficits are the chief cause of inflation also founders on a comparison of budget deficits and inflation among different countries. Japan and Germany in recent years have had much better success in combating inflation than the United States. Yet their budget deficits, especially those of Japan, have been much higher relative to the size of their economies than has been the case in the United States (Table 5).

TABLE 5.—*International comparison of deficits and inflation, 1977–79*

Country and item	1977–79 annual average
United States:	
Public sector surplus or deficit (−) as percent of GNP [1]	−0.1
Inflation rate [2]	8.4
Germany:	
Public sector surplus or deficit (−) as percent of GNP [1]	−2.7
Inflation rate [2]	3.5
Japan:	
Public sector surplus or deficit (−) as percent of GNP [1]	−4.8
Inflation rate [2]	5.1

[1] Standardized national accounts basis.
[2] Percent change in consumer price index.

Sources: Department of Labor (Bureau of Labor Statistics) and Organization for Economic Cooperation and Development.

Stating that deficits are not the sole cause of inflation does not, of course, imply the opposite proposition—that the size of the budget deficit is unimportant to the control of inflation. Subsequent sections of this chapter emphasize the importance of fiscal restraint in a long-term program to reduce inflation.

Supply Shocks as a Source of Inflation

Sharply higher prices in one sector of the economy can lead to surges in inflation even when excess aggregate demand is absent. These sudden and massive changes generally spring from conditions that cannot be controlled. The most important of these have been increases in food prices resulting from shortages and increases in oil prices mandated by OPEC. These events are no different from such common supply disruptions as strikes, accidents, and natural disasters, but they are much larger, and it is their size which makes their effects exceptional.

Price shocks have both direct and indirect effects. Consumers feel the price increases directly, and these direct effects may be magnified by the brevity of the time in which they occur, resulting in extraordinary jumps in reported inflation rates. In addition, price increases in agricultural or energy raw materials translate indirectly into price increases in the final products that utilize those materials, although the degree and timing of the pass-through depend on market conditions. This secondary impact is quite important in the case of petroleum, half of which is used by businesses in production and transportation.

As an abrupt increase in the price of an important commodity translates into an increase in the cost of living, pressure builds for wage gains to match the new inflation. Some gains take place automatically where wages are linked to prices through cost-of-living clauses in union contracts. Additional acceleration occurs as new contracts are negotiated. As businesses observe the rising wage-price spiral, they are likely to expect a higher future level of inflation. They are then somewhat more likely to grant larger wage increases, both in the belief that rising inflation will make it possible to pass through increases in higher prices and in order to avoid losing workers. Through this process, a sharp increase in food or oil prices can lead to a rise in the underlying inflation rate.

The magnitude of the inflationary process set in motion by an oil-price increase or some other supply shock depends on the state of the economy. The more prosperous the economy and the lower the unemployment level, the more likely it is that the initial increase in prices will lead to higher wage increases and a higher underlying inflation rate.

In addition to their inflationary consequences, supply shocks also create recessionary forces. The very large increases in oil prices in 1974 and 1979 not only spurred inflation but simultaneously depressed aggregate demand. They were therefore largely responsible for the recessions of 1974–75 and 1980. After paying sharply higher prices for petroleum products, consumers had less to spend on other goods and services. But those who received the revenues from higher oil prices—foreign and domestic oil producers—increased their demands for U.S. exports and investment goods only gradually. On balance, therefore, aggregate demand and spending fell, leading to lower output and reduced employment.

Such a simultaneous increase in inflation and unemployment brought on by supply shocks creates a dilemma for economic policy. If monetary and fiscal policies produce additional aggregate demand to "compensate" for the recessionary forces set in motion by a supply shock, there is likely to be a large induced rise in inflation. If, on the other hand, no effort is made to compensate, aggregate demand will fall. But given the relative insensitivity of wage and price decisions to moderate slack in the economy, some increase in the underlying inflation rate is nonetheless likely. Only sharply restrictive monetary and fiscal policies, which strengthen the forces leading to recession, can prevent an increase in the underlying inflation rate. While recessionary forces came into play in 1974 and 1980, the slackening of aggregate demand was not sufficient to avoid another upward ratcheting of the inflation rate.

The Role of Declining Productivity Growth

Over the past decade—and perhaps since the mid-1960s—the rate of productivity growth in the United States has slackened. (A later section of this chapter examines this trend in more detail.) This slackening has been an unwelcome development, since productivity growth can offset the effects of rising wages on business costs and prices. When productivity growth slows but increases in wages continue, the rate of increase in costs and prices rises. While short-term variations in productivity growth may not be recognized in setting prices, a longer-lasting slowdown in productivity will be reflected in higher prices. Once prices begin to rise in response to this pressure, another round of wage demands is stimulated as workers try to offset the increased cost of living. This raises the underlying inflation rate yet again.

The Downward Insensitivity of Wages and Prices

If wages and prices were sensitive to a moderate degree of slack in the economy, careful control of aggregate demand through monetary and fiscal policy could bring rising inflation to a halt quickly and at a modest cost. True, mistakes in policy might occur from time to time, and supply shocks over which the government has no control would still take place. But inflation could be brought down relatively quickly and easily if it did not have—as it has now—a large degree of inertia.

Before World War II, and perhaps in the immediate postwar years, wages and prices were more sensitive in a downward direction. (See Chart 3, for example.) Several careful economic studies show that in that earlier period a moderate or short-lived slackening of aggregate demand tended to reduce the rate of inflation significantly. Those who have compared that earlier era with more recent times differ in their views as to precisely why things have changed, but the basic causes are clear.

During the past several decades the vast majority of firms, labor unions, and workers have come to expect that expansionary government policies will be applied sooner or later to reverse recessionary tendencies in the economy. Since current wage and price decisions are strongly influenced by what workers and firms think the future will hold, the expectation of stimulus removes much of the motivation for moderating wage and price behavior. Businesses and unions have also developed a growing tendency to turn to government for relief, often with some success, when their high prices and wages lead them into competitive difficulties. All of these factors have weakened the incentive for businesses and workers to restrain their wage and price demands, even in the face of softening markets. These actions do not depend on specific knowledge about future government

policies but are based on the widespread view that "the government won't allow things to get too bad."

Prior to World War II, however, popular expectations were different. The Federal Government had historically played little role in smoothing the economic cycles, and substantial depressions as well as mild recessions occurred periodically. Up until the 1930s there was no unemployment insurance, social security, or deposit insurance to ameliorate the consequences of economic downturns. When markets started to weaken, there was no reason to believe that any support—in the aggregate or for individuals—would be forthcoming from the government. As a consequence, wages and prices quickly subsided as businesses and workers scrambled to survive. The cycle, furthermore, was self-reinforcing. Because inflation often led to a slump, followed by a speedy reduction in inflation, businessmen and others came to expect that inflation would not last long; this expectation itself moderated their behavior with respect to wages and prices.

After World War II, however, the United States and other industrial countries decided that the costs of this kind of painful adjustment were too high. Thus, countercyclical policy was founded. The success of that policy, and the existence of various programs of income support to protect individuals in case of unemployment, have changed the character of expectations. In the new environment the appearance of slack markets, idle capacity, and higher unemployment leads to far less moderation in wage and price increases. Downward flexibility has not disappeared, but it has diminished.

Current wage and price behavior has deep-seated structural origins and is not based solely on current expectations about governmental behavior. Since most large wage contracts run for 2 or 3 years, the rate of wage increase in any particular year will have been determined in part by negotiations in earlier years under different conditions. In addition, the expiration dates of multiyear wage contracts for different industries are staggered, and the wage increases negotiated in any industry will be influenced to some extent by the size of earlier increases won by unions in other industries. Moreover, the prospect of further inflation over the life of these contracts has led to the inclusion of cost-of-living clauses, which provide wage increases even when markets are slack. Although union contracts cover less than one-quarter of the civilian labor force, the partial insulation of these contracts from current economic events has some effect on the wages that nonunion firms must pay.

Quite apart from the existence of written contracts, there are mutual advantages to both firms and workers from wage-setting practices that are relatively insensitive to economic slack. In complicated modern societies the costs of acquiring information about alternative

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job opportunities are very high for workers, and the costs of training a skilled work force are very large for businesses. Both workers and firms see benefits in establishing long-term relationships. One way for a firm to attract and hold a skilled work force is an implicit agreement not to engage in extensive wage-cutting during periods of weak markets. As a consequence, many firms are unwilling to take a chance of losing out in the labor market by being among the first to reduce wage increases.

Other institutions besides those of wage-contracting contribute to the downward insensitivities of prices and wages. In the case of prices, the downward pressure that would normally be exerted by competitive forces in slack markets is significantly muted in large oligopolistic industries by market strategy considerations and various forms of administered prices. Finally, government intervention in individual markets through regulation, which may fix wages, the price or quality of the product, or the conditions under which production takes place, adds further rigidity.

Some of the economic institutions and practices that contribute to wage and price rigidity themselves evolved in response to expectations that government economic policy would continue to be supportive. Although the persistent application of demand restraint is likely to reduce them, they should not be expected to disappear easily or quickly.

Downward wage and price rigidity makes the costs of reducing inflation through monetary and fiscal restraint quite large. It is difficult to estimate the costs with precision, but representative econometric studies suggest that reducing inflation by 1 percentage point would require a sacrifice of $100 billion in lost output (in 1980 prices) and a one-half percentage point rise in the unemployment rate over a period of about 3 years. Most of the costs would be incurred in the first half of the period. These statistical estimates, however, are based on historical relationships. There has never been a period of sustained economic restraint in recent times from which direct evidence of the costs could be drawn. The possibility that they would grow significantly smaller if restraint persisted is discussed later in this chapter.

In sum, it is the costs imposed on society when demand restraint clashes with the downward insensitivity of wages and prices that makes it so difficult to reduce inflation by applying monetary and fiscal restraint. Viewed in this perspective, the central problem of economic policy is not how to reduce inflation. If that were the only objective, a sufficiently draconian level of demand restraint could be found to do the job. The real issue is twofold: How large are the costs society is willing to bear to realize the benefits of lower infla-

tion, and can policies be designed to lower those costs so that inflation can be reduced faster with smaller losses in output and employment?

MANAGING AGGREGATE DEMAND

Monetary and fiscal policy must be designed to prevent aggregate spending that is so high or growing so fast relative to the Nation's productive capacity that it encourages a speedup in the rate at which wages and prices are rising—i.e., an increase in inflation. To play a role in lowering the underlying inflation rate, growth in aggregate demand must be further restrained to a point where firms and workers reduce the rate at which they raise wages and prices.

This section starts by specifying a policy of demand management that aims at a gradual reduction of inflation in a world where the inflation rate is highly resistant to downward pressures. Particular attention is paid to the problem of establishing the credibility of anti-inflation policies so as to influence popular expectations in a favorable way. The section then considers some of the special problems of managing monetary policy in a period of high inflation and frequent economic disturbances.

BROAD PRINCIPLES

Three broad principles, discussed at length in last year's *Report,* can guide monetary and fiscal policy as it seeks to reduce inflation while providing for reasonable growth:

First, monetary and fiscal policy should aim for a long-term reduction in the growth of nominal GNP (aggregate spending). That reduction should not be abrupt, or it will produce large decreases in employment and production while reducing inflation only modestly. But the restraint must be maintained, since wages and prices tend to resist the downward pressure.

Second, the pace of nominal GNP growth will undoubtedly need to fluctuate along a declining trend. Realistically, even if there is a decrease in the inflation rate in 1981, for example, some rise in nominal GNP growth will be required to accommodate a modest recovery from the 1980 recession. A policy of fiscal and monetary restraint to produce a long-term reduction in the growth rate of nominal GNP may thus need to be adjusted from time to time to take account of short-term changes in economic conditions. But several cautions are required. Unless clearly warranted and carefully explained, shorter-term adjustments to economic policy can threaten the credibility of longer-term restraint. Moreover, because an increase in inflation once underway is so very hard to eliminate, an inflationary mistake takes much longer to reverse than its opposite. The risks that policy-

makers face are not symmetrical and, as a consequence, uncertainty must be resolved in favor of caution.

Third, no matter how well designed, monetary and fiscal policies cannot prevent large outside shocks to the economy from imposing some damage on employment, price stability, or growth. A practical approach would be to "accommodate" the direct inflationary effect of external price shocks but restrain aggregate demand sufficiently to minimize the indirect inflationary effects that would result if individuals attempted to raise wages and other incomes to "catch up" with higher prices. Without huge costs in terms of lost production, however, it would probably be impossible to restrain demand sufficiently to eliminate all induced increases in inflation. In these circumstances a voluntary incomes policy may be able to make a significant contribution. This seems to have occurred in 1979, when the response of wages to the large rise in inflation was substantially muted.

Because the rate of increase in wages and prices tends to resist downward pressures, a policy of continued restraint on the growth of aggregate demand sufficient to induce a decline in inflation will mean sustained slack in the economy and will result in a period of relatively slow growth in production and employment. This outlook could be improved if it were possible to change the behavior of wages and prices so that they responded to demand restraint more rapidly and by larger amounts.

THE ROLE OF EXPECTATIONS AND THE CREDIBILITY OF DEMAND RESTRAINT

Earlier in this chapter the downward resistance of wage and price inflation was attributed in part to a widespread expectation that expansionary government policies will rather quickly be applied to reverse recessionary tendencies. If firms and workers became convinced that the government meant business, that the markets for their products would not be supported by easier money or fiscal stimulus, and that they could continue raising wages and prices only at their own peril, their decisions about wage demands and pricing policies would undoubtedly be affected. The downward "stickiness" of wage and price inflation would be eased.

Does the government need to put the economy through one or more prolonged periods of economic slack in order to demonstrate the firmness of its anti-inflation commitment? Or can it avoid that necessity by somehow convincing the Nation in advance of its determination? Some observers have suggested, for example, that the government could show its resolve by announcing a target path for nominal GNP or for money supply growth (or both) and by committing itself to pursuing those targets whatever the consequences for unemployment and production. The target path would permit pro-

duction and employment to grow only if they were accompanied by significant reductions in wage and price inflation. But simply announcing a set of targets does not guarantee that they will steadfastly be pursued in the face of mounting losses in employment, profits, and sales. Indeed, the tougher the targets and the greater the demand restraint they seem to require, the less likely they are to be credible, for their success will rely on an uncharacteristic willingness on the part of the Administration, the Congress, and the public to accept large reductions in employment and production rather than abandon the targets.

The mere announcement of government intentions is, therefore, unlikely to produce a significant change in wage and price behavior. The actual experience of persistent demand restraint, followed by a substantial number of individual firms and unions pricing themselves out of the market, would almost certainly be necessary before the credibility of the policy was established. In addition, the government would have to refuse pleas for trade restrictions, subsidies, or other relief for those who failed to moderate their wage and price increases.

Even if firms and workers became convinced that the government was determined to persist in its demand restraint regardless of the consequences, to what extent would they respond with a greater willingness to cut wage and price increases, especially if the demand restraint were moderate instead of very severe? The answer would depend in part on whether they expected inflation or production to fall first. If individual firms believed that demand restraint was synonymous with lower inflation, they would undoubtedly restrain their own wage and price increases, since they would be reluctant to get far out of line with the wages and prices of other firms and industries. But given the downward insensitivity of wages and prices experienced over the past several decades, demand restraint might at the present time lead instead to expectations of lower output. It is not at all clear, therefore, how sharply wages and prices would respond to a moderate decline in demand even if it was expected to last for a long while.

Equally important, strong structural components of wage and price stickiness discussed earlier in this chapter would remain. These structural factors are, in the near term, independent of expectations. As a consequence, other measures would also have to be pursued as a means of speeding a reduction in inflation and raising the growth of production and employment in the face of continued demand restraint.

The foregoing discussion suggests that one of the most critical questions in designing anti-inflation policies is determining the

extent to which the downward stickiness of wage and price inflation has been due to popular expectations rather than to structural factors. While there is no clear-cut answer to this question at the moment, it is surely true that expectations about the persistence of government policies of demand restraint affect the responsiveness of wages and prices. To the extent that the credibility of government policies can be strengthened, the reduction in inflation will come more quickly and the social costs will be reduced. The fact of persistence in an anti-inflation policy—as happened in 1980, when no fiscal stimulus was offered and a restrictive monetary policy was maintained in the face of a weakening economy—should gradually help to modify business and worker behavior. But it would be imprudent to expect entrenched expectations to be changed quickly.

MONETARY POLICY

The Federal Reserve bears a substantial share of the responsibility for carrying out aggregate demand management. As discussed above, the monetary authorities must first confront the question of the appropriate degree of economic restraint. The problem is to achieve the proper balance in order to reduce inflationary pressures at a minimum cost in lost jobs and production. Formulating and implementing policies to achieve this balance in a period characterized by wide fluctuations in economic and financial conditions confronts the monetary authorities with a number of serious additional challenges. While these problems are generally technical in nature, the manner in which they are resolved can have a significant impact on the degree of monetary restraint.

Monetary policy can exert no direct control over aggregate demand. It must exert its influence indirectly, that is, by affecting actual and expected conditions in the money and credit markets. The linkages between what it can control (the cost and availability of bank reserves), its intermediate indicators of conditions in the money and credit markets (the monetary aggregates and interest rates), and its ultimate goals (the impact on real growth and prices) are imperfect and often are not directly observable, even after the fact. In evaluating these linkages, the monetary authorities must rely on predicted relationships based on economic theory and historical experience, and there is plenty of room for slippage. These technical problems create considerable uncertainty for the makers of monetary policy.

A related issue is that the effectiveness of the monetary authorities in bringing down inflation depends on how firms and individuals perceive monetary policy. Private sector expectations of the likely success of monetary policy influence its actual success. Consequently, it is important that the monetary authorities demonstrate that they have chosen a strategy that will achieve their anti-inflation objectives.

Moreover, their actions must indicate that they have the technical capability to meet these objectives while responding forcefully to new situations and to any divergence between desired and actual developments.

In recent years the debate on these issues has focused on the Federal Reserve's target growth ranges for monetary aggregates and on the process of setting and implementing these targets. The targets are defined in terms of the narrow measures of the money stock (formerly M–1 and now M–1A and M–1B, which include currency and various types of checkable deposits), the broader measures of the money stock (M2 and M3, which include currency and checkable deposits as well as time and savings deposits and other deposit-like instruments), and bank credit. The Federal Reserve has used monetary growth targets internally since the early 1970s, and since 1975 it has announced them publicly in testimony before the Congress.

In October 1979 the Federal Reserve modified its procedures for implementing monetary policy in order to give greater emphasis to keeping the growth of the aggregates within the target ranges, even if that meant more variation in interest rates. By this change, the Federal Reserve was widely perceived as having established the realization of its targets as a benchmark for measuring the performance of monetary policy.

While the notion of monetary targeting may appear quite straightforward, in practice there are a number of questions that must be resolved in carrying out a targeting strategy. Among these, three in particular deserve attention here:

- How should the Federal Reserve set its monetary growth targets, both in terms of choosing particular measures of money and choosing numerical targets?
- What is the appropriate monetary policy response when the relationships among economic variables, on which the initial targets were set, appear to shift?
- How rigidly should the Federal Reserve adhere to its longer-run growth ranges over the short run?

Choosing the Appropriate Measure of Money

Debate over selection of the appropriate measure by which to guide monetary policy must take into account the tradeoff between the ability of the Federal Reserve to control any monetary aggregate and the influence of that aggregate on overall demand. For example, the monetary base, composed of currency held by the public plus bank reserves, is probably the easiest for the Federal Reserve to control. But studies have shown that the relationship between the monetary base and aggregate demand is not very close. The narrow meas-

ures of the money stock (M-1A and M-1B) are somewhat harder to control but in general have been more closely tied to aggregate demand. Some economists argue that a broader measure of the money stock, such as M-2, has the most stable relationship with aggregate demand, but the very breadth of this measure—including as it does a mixture of the liabilities of several types of financial institutions—makes it rather difficult to control.

A related issue is how the various measures of the money stock should be defined. The rapid evolution of the financial markets in recent years (see the discussion in Chapter 2) has blurred the historical distinctions between the types of financial instruments and rendered somewhat ambiguous what should be treated as "money." These developments have been partly responsible for the recent instabilities in the relationship among the narrow monetary measures, economic activity, and interest rates—instabilities commonly referred to as shifts in money demand.

In light of these considerations, the Federal Reserve has chosen to consider a family of monetary aggregates to impart a needed degree of flexibility. Thus, while a narrow aggregate like M-1B has been accorded primary emphasis, there may be periods when it provides an uncertain guide for monetary policy. At such times the Federal Reserve may put more emphasis on the broader measures of the money stock, such as M-2.

Setting Numerical Targets

Once the Federal Reserve determines which monetary aggregates to target, numerical target ranges must be set to achieve the appropriate degree of aggregate demand restraint. The targeting procedure could, for example, begin by determining the appropriate path for nominal GNP that would be consistent with a gradual decline in inflation. Abstracting from cyclical variations in real economic expansion, a steady reduction of inflation would imply a gradual decline in nominal GNP growth.

Given this objective, the monetary authorities would need to estimate growth rates for the monetary aggregates that would satisfy the needs of an economy moving along the presumed declining path of nominal GNP. These would then become the basis for choosing the target growth ranges. Over the past two decades a given growth rate of the narrow measures of money has, on average, financed a 2 to 3 percentage point faster rate of expansion of nominal GNP, although the pattern has varied from year to year. This relationship suggests that the goal of a gradual decline in the growth of nominal GNP would be consistent with a gradual lowering in the target ranges, although not necessarily every year.

Starting with its 1975 targets as a base, the Federal Reserve has, in fact, adhered to a policy of lowering the target ranges by a small amount in each year (Table 6). What has been the result? In some years (1977, 1978, and 1980) the targets were exceeded. In the others there were apparent shifts in money demand such that actual money growth was much lower than would be predicted on the basis of historical relationships.

Predicted M-1 growth for the last 5 years is shown in the third column of Table 6, and the difference between predicted and actual money growth is in the last column. As the figures indicate, those years when actual money growth was in the target ranges (1976 and 1979) were periods in which there were the largest downward shifts in money demand. In effect, actual money growth during these periods supported a greater-than-expected growth of nominal GNP. In the remaining years money growth was nearer the rate expected from historical money-demand relationships, but that growth was above the target range. These two factors—money demand shifts and missing the targets—help to explain how such low values for the monetary growth targets could have persisted in a period of high nominal GNP growth. Over the entire period more nominal growth was accommodated than is implied by the monetary targets and the historical relationships.

TABLE 6.—*Monetary growth rates, 1975–80*

Period	Money growth (percent change from fourth quarter a year earlier)			Predicted minus actual money growth (percentage points)
	Target	Actual	Predicted[1]	
Fourth quarter:				
1976 (M-1)	4½–7½	5.8	10.0	4.2
1977 (M-1)	4½–6½	[2]7.9	9.9	2.0
1978 (M-1)	4 –6½	[2]7.2	8.8	1.6
1979 (M-1)	3 –6	5.5	7.8	2.4
1980 (M-1B)	[3]4 –6½	[2 4]7.1	7.3	[4].1

[1] Predicted money growth based on Council of Economic Advisers money demand equation using actual historical data for GNP, interest rates, and prices.
[2] Above target range.
[3] The target range for 1980 based on the newly defined aggregate M-1B was chosen to be consistent with a slowing in monetary growth as compared to 1979.
[4] Preliminary.

Sources: Board of Governors of the Federal Reserve System (target ranges and actual money growth) and Council of Economic Advisers (predicted money growth).

Although the continuing application of monetary restraint could call for reductions of the monetary growth ranges over time, there are a number of problems which have to be faced. In particular, the question arises about the extent to which adjustments in monetary targets ought to be made when structural changes occur in the economy.

In the last decade there have been several abrupt shifts in the relationships among important economic factors—disruptions related to

jumps in oil and food prices as well as to shifts in money demand. The problem for the Federal Reserve is how, if at all, to adjust monetary growth targets in response to these changes. This requires an evaluation of the likely direct impact of monetary and credit conditions on economic activity, as well as an assessment of how altering the monetary targets would affect wages and prices.

Response to Supply-Side Shocks

When the economy experiences a supply shock such as the recent surge in oil prices, the initial results are likely to be a reduction in aggregate demand and a rise in unemployment and inflation. As discussed earlier, the Federal Reserve can respond in several ways. At one extreme, the response would aim at accommodating the shock completely, thus restoring real aggregate demand to its level before the shock and avoiding any rise in unemployment. At the other extreme, the response would attempt to offset fully both the direct and indirect inflationary effects. The intermediate position suggested earlier would be to accommodate the direct effects of the price shock but seek to minimize indirect effects.

If the latter strategy were adopted, the monetary targets necessary to pursue it would be identical to those prevailing before the shock only by pure chance. Some adjustment would almost invariably be required, but whether the appropriate response entailed greater or less monetary growth than the original target ranges would depend on conditions prevailing in the economy at the time as well as on the complex dynamic responses of wages and prices after the shock. Moreover, the monetary authorities must remember that their credibility may be damaged if this strategy were to entail an upward adjustment in targets. Such a consideration may lead to a less accommodative position than analysis based strictly on aggregate demand conditions would warrant.

Changes in Money Demand

Shifts in money demand confront the monetary authorities with a different set of problems. Here the appropriate policy response is clear in theory. For example, money-demand shifts have at times in recent years resulted in sudden reductions in the amount of money necessary to support a given amount of economic activity. Holding to predetermined monetary targets in the face of such shifts would mean a more accommodative policy than previously intended. Alternatively, by reducing monetary growth targets commensurate with the demand shift, an unchanged degree of monetary restraint would be maintained.

Although the response is clear in theory, in practice there are many problems. It is difficult for the Federal Reserve to know until

well after the fact whether the money-demand relationship has changed permanently. If one could observe money, interest rates, and nominal GNP contemporaneously, one could judge whether these developments were roughly in line with historical patterns. If they appeared to be out of line, a shift in demand might be suspected. Two problems in ascertaining a shift are the long delay before data on GNP are available, and the frequent revisions subsequently undergone by both GNP and money data. Another problem is that the "normal" demand for money cannot be estimated precisely, so that even with timely data it may take several quarters before the shift becomes evident.

Suppose that a money-demand shift is suspected of having occurred, but its magnitude is uncertain. How should the monetary authorities adjust the targets in a way that maintains a steady degree of monetary restraint? First, the targets for the narrow aggregates might be adjusted by shifting the midpoints of the longer-run target ranges according to the "best guess" of how the structural shift will affect the growth rate. Second, if the impact of the structural change is uncertain, the upper and lower bounds of the growth range may have to be widened to reflect that uncertainty. Third, if—as in the past—the broader money measures do not appear to be affected as much by the structural changes, more emphasis could then be put on the broader aggregates in guiding monetary actions. At such times the relatively greater stability of the relationship of the broader aggregates to income and interest rates may give the monetary authorities a somewhat better measure of monetary stringency. The risk in making these adjustments is that the public may lose sight of why such changes are being made—interpreting them as mere tinkering or as devices aimed at loosening monetary restraint. Thus, the monetary authorities stand to lose credibility unless they can convince the public of the need for such adjustments when they are appropriate.

Problems of Short-Run Variability

Once the annual numerical targets have been set, and adjusted for major supply shocks or shifts in money demand if necessary, the next question is how rigidly the targets should be followed during the year. It is important to recognize that random and temporary fluctuations will inevitably occur, affecting both the demand and supply sides of the financial markets. Empirical evidence suggests, however, that deviations from a desired money growth path lasting as long as a quarter do not destabilize aggregate demand if they are subsequently corrected. Hence, rigid adherence to a longer-run target over periods as short as a month or a quarter would require wide fluctuations in interest rates, which could disrupt the economy unnecessarily. In view of the importance of preserving Federal Reserve credibility, it is

essential for the public to understand that such short-run deviations are not nearly as consequential as they are sometimes made out to be.

The problem for the Federal Reserve is to distinguish these temporary disturbances from more permanent shifts in economic relationships for which some response may be necessary. Since the monetary authorities cannot determine until well after the fact whether a divergence in money growth is permanent or self-correcting, they must establish short-run procedures that partially accommodate temporary disturbances but respond with increasing intensity to systematic trends. The current procedures for implementing the longer-run growth target ranges include setting short-run money targets periodically during the year and managing reserves on a day-to-day basis to meet those targets. These procedures are designed to achieve a proper balance between avoiding unnecessary disturbances in the money markets and responding in a timely fashion to sustained movements of actual money growth away from the desired path.

In practice, this process is subject to a number of slippages, both in the relationship between reserves and money and in the actual control of reserves. Because different components of the money stock are subject to different reserve requirement ratios—and some are subject to no reserve requirements—the ratio of reserves to money can vary unpredictably when funds are shifted among types of deposits and among institutions. This hinders short-run monetary control. Changes in reserve requirements and reserve coverage associated with the Depository Institutions Deregulation and Monetary Control Act of 1980, discussed in Chapter 2, should reduce the variation in the money-reserve ratio, but only gradually. Until this transition period is completed, the variation in this crucial ratio will continue.

Even if the linkage between money and reserves were perfectly stable and predictable, the Federal Reserve would still need to be able to control total reserves. Current problems in forecasting the various uncontrollable factors affecting reserves, in reserve accounting procedures, and in the management of the discount window make it difficult to achieve the target for total reserves. The Federal Reserve is working to improve its forecasting techniques and is considering other reforms that would increase its control over reserves.

Thus, one should not expect the Federal Reserve to adhere rigidly to its annual monetary targets in every period during the year. Temporary and largely self-correcting disturbances will inevitably lead to short-run deviations, but these deviations should have few permanent economic consequences. The current targeting process of the Federal

Reserve provides some flexibility in the face of such temporary disturbances, even with unchanged annual monetary targets.

Conclusions

One of the major lessons that emerges repeatedly in the preceding discussion is the need for understanding, by the public generally and the financial community in particular, of the complexities of monetary policy. Monetary targeting provides an invaluable tool to increase monetary discipline, to communicate Federal Reserve intentions, and to evaluate performance. But the advantages of a semiautomatic rule to guide the monetary authorities are not absolute. In a world where economic and financial markets are subject to major and unpredictable changes, deviations from the Federal Reserve's announced intention to reduce steadily the annual target ranges may sometimes be necessary. Targets, once set, may occasionally have to be modified. And allowing short-run deviations of actual from targeted money growth may be called for if care is taken not to let them persist. But if the public interprets occasional necessary changes in the longer-run monetary target ranges, or short-run deviations of actual money growth from those targets, as evidence that the Federal Reserve has lessened its determination to fight inflation, the monetary authorities will be put in an untenable position. If they fail to make the adjustment in the monetary targets that is called for by a major change in economic circumstances, or if they attempt to avoid all short-run deviations of actual from targeted money growth, monetary policy may produce unwanted results. If, on the other hand, they do change the targets or allow temporary deviations, their actions may be misunderstood by the public and their credibility consequently impaired. The monetary authorities will face this problem once again in 1981, as is discussed in Chapter 3.

INCOMES POLICIES

Even if they are followed with persistence and acquire a credibility that favorably affects expectations, monetary and fiscal restraints are likely to reduce inflation only slowly and at significant cost in lost output and employment. Incomes policies attempt to lower these costs. By directly influencing the setting of wages and prices, incomes policies seek to decrease the inflation and increase the growth of output and employment that result from any given degree of demand restraint. A tight monetary target, for example, is compatible either with a small reduction in inflation and zero economic growth or a larger reduction in inflation and positive economic growth. By persuading workers and employers to accept lower pay and price in-

creases, an incomes policy tries to make the second combination possible.

Incomes policies range from the informal pressure on a few large corporations and unions exerted by the Kennedy Administration to the formal review of price and wage increases by the Council on Wage and Price Stability (CWPS) to even more formal schemes based on the tax system, examined in detail below. While mandatory wage and price controls are the extreme form of an incomes policy, the discussion in this chapter is confined to voluntary forms, that is, forms which do not involve legal prohibition of excessive wage and price increases.

An effective incomes policy encourages various groups in society to accept lower wages and prices for the goods and services they supply in the expectation that the wages and prices they pay will also be lower. An incomes policy that gains widespread support can meet these expectations. Workers agree to lower their wage demands, and thus unit labor costs rise more slowly. Firms moderate their price increases, and therefore workers' costs of living rise more slowly. The implicit agreement made among government, workers, and firms to take simultaneous actions to slow the wage-price spiral through the mechanism of the incomes policy is thus successful principally to the extent that people believe it will be successful.

To have a lasting influence on inflation, an incomes policy must do more than lower the current rate of increase in wages and prices. It must also lower expectations about the *future* rate of inflation. Workers must believe that they can achieve their real wage demands with lower nominal wage gains, and firms must believe that large nominal wage gains or other cost increases will be hard to pass on into prices. While our knowledge about the formation of expectations leaves much to be desired, it does suggest that a short-lived reduction in inflation may be insufficient to change expectations sharply. To be successful in lowering inflationary expectations, therefore, an incomes policy probably has to be in effect for more than a single year.

Even more important, an incomes policy will have no hope of a lasting effect unless it is accompanied by monetary and fiscal restraint. If there is excess demand in labor and product markets, or if monetary and fiscal policies create expectations of excess demand, the basic tenet of an incomes policy is destroyed. Individual employers or groups of workers cannot then assume that their own moderation will be matched by moderation from others.

Although incomes policies can help to reduce inflation, they also tend to create losses of economic efficiency. Ideally, economic policy seeks to lower the *average* rate of wage and price increase while leaving individual wages and prices to adjust freely around that average

in response to circumstances in particular markets. In reality, of course, an incomes policy cannot operate on a statistical average but must deal with the wages and prices of individual firms. Therefore, incomes policies inevitably discourage to some extent movements in prices and wages relative to each other. Over time, the failure of relative prices to adjust in response to changing conditions leads to mounting losses of economic efficiency. The more rigid and mandatory in character the incomes policy, and the longer it is kept in place, the greater will be the efficiency costs.

This Administration has judged the benefits of a relatively flexible and voluntary incomes policy to be significantly greater than its costs. In late 1978 the Administration set forth voluntary standards for pay and price increases as the centerpiece of an incomes policy. This section of Chapter 1 briefly reviews that program, and then evaluates a wide range of measures known as tax-based incomes policies (TIPs) under which tax penalties or rewards are employed as a means of inducing moderation in wage and price increases.

THE PAY AND PRICE STANDARDS

For the past 2 years the Administration's incomes policy has centered on the voluntary pay and price standards. Administered by CWPS, this program applied to firms of all sizes, but only large firms were asked to submit data on pay and either prices or margins. The standards set by CWPS were designed to reflect the structures of different industries. Compliance was encouraged by appealing to firms and workers to restrain price and pay increases in the public interest. CWPS also used public opinion and the threatened loss of government contracts to encourage compliance.

Although the standards were voluntary and were in place during the difficult period of the 1979 OPEC oil price explosion, they appear to have played a role in moderating inflation. Studies by CWPS and the Council of Economic Advisers have estimated that annual wage increases were 1 to 1½ percentage points lower during 1979 than they would have been without the standards. The consequent reductions in labor costs also appear to have been passed on to consumers through lower price increases. A more recent evaluation of the pay and price standards by CWPS suggests that the program continued to have a moderating effect in the second year.

After 2 years of operation there seems to be general agreement that the current pay and price standards could not continue to be effective if simply extended in their present form. Workers and firms no longer appear to be willing to moderate wage and price rises in the expectation that the standards will restrain inflation.

One way of strengthening a voluntary standards program would be to supplement it with a tax-based incomes policy, or a TIP. Such a policy would use the tax system to provide tangible incentives to firms and workers to slow the rate of inflation.

As the discussion in this section later concludes, the most effective kind of TIP would be one that rewarded employees of firms whose rate of wage increase was below the standard. Such a program would significantly reinforce the spirit of cooperation used in other voluntary forms of incomes policies without creating as many distortions as a mandatory program. Firms and workers that agreed to moderate their price and wage increases would be making less of a sacrifice under a TIP than under other voluntary programs. And in sectors of the economy in which relative prices and wages were too low, a TIP would allow adjustments. The most serious distortions in relative prices and wages that develop under mandatory controls would be avoided under a TIP.

Several years ago the Carter Administration proposed to the Congress one particular version of a TIP—the "real wage insurance" program—but the proposal was not acted upon by the Congress, and in fact was not subjected to widespread public discussion and debate. TIPs continue to represent an important untried innovation in the area of anti-inflation policy. While TIPs may impose administrative and efficiency costs, those costs appear to be far less than would be incurred by reducing inflation solely through restraining aggregate demand.

Various kinds of TIPs have been suggested. Under a pay TIP, for example, the government would set a standard for pay increases over the coming year. Groups of workers whose average pay increase did not exceed the standard would be in compliance. In one version of the pay TIP, firms whose wage increases exceeded the standard would be assessed a tax penalty. In another version, all workers in a complying group would receive a tax credit, including individuals within the group whose pay raises were above the standard. Similarly, a price TIP would provide penalties or rewards to firms on the basis of their average price increases relative to a set of standards.

In virtually all versions of the TIP it is the *average* rate of wage or price increase within the firm that is compared with the standard for purposes of determining tax penalties or rewards. With this approach, firms are able to change the relative pay and prices of subgroups of workers and products. Merit pay plans and promotions that give individual pay raises in excess of the standard can still be used to encourage productivity.

Although the flexibility of TIPs makes them attractive, using the tax system to reduce inflation poses serious administrative problems. These problems present the major obstacles to designing an effective TIP program. The following sections discuss issues of design in some detail, and a Technical Appendix to this chapter examines other problems in measuring average pay increases.

Several choices must be made in designing a TIP. First, should it dispense rewards or levy penalties? Second, should receiving the penalty or reward depend only on being above or below the standard (a "hurdle" TIP), or should the size of the penalty or reward be graduated in accordance with the difference between the standard and the actual pay or price increase (a "continuous" TIP)? Third, should the TIP be a permanent or a temporary program? Finally, should the TIP apply to pay, to prices, or to both? These choices require striking a balance among equity, efficiency, administrative ease, and effectiveness in reducing inflation. The next section discusses the first three choices in the context of a pay TIP, and presents estimates of the cost and effect of a specific pay TIP. Another section discusses price TIPs.

Varieties of Pay TIPs

For several reasons, a reward pay TIP is probably preferable to a penalty pay TIP. A reward TIP encourages workers to cooperate with a voluntary incomes policy by compensating them for accepting lower nominal pay increases than they would otherwise receive. A penalty TIP, whether levied on firms or on individuals, will tend to undercut the spirit of cooperation necessary for a successful incomes policy. This is especially true because incomes policies are often thought to be more effective in restraining pay increases than in limiting price or profit increases. In addition, although lower rates of increase in wage rates and unit labor costs eventually result in lower price increases, the effect is not immediate. In the short run, wages may increase more slowly but prices might not. Workers would therefore be more willing to cooperate with an incomes policy that partially compensated them for accepting, at least in the short run, lower real incomes than they would have earned in the absence of a TIP. Since a reward TIP provides such compensation, at least in part if not in full, it would be both more equitable and more acceptable to workers than a penalty TIP.

Furthermore, a penalty TIP has other drawbacks. If levied against firms, it might increase the rate of inflation. Some of these firms would be able to pass on the cost of the TIP penalty to consumers, especially if the above-standard increase were industry-wide. Some prices therefore would rise as a result of the TIP. Levying the penalty on individuals rather than firms raises different objections. Such a

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penalty TIP would occasionally penalize employees who received little or no pay increase but who worked for firms with large average pay raises. For such individuals, a penalty TIP would add injury to insult and would be perceived as very unfair.

A penalty TIP would raise government revenues, which could be returned to the private sector through offsetting tax cuts. By contrast, a reward TIP would cost the Federal Government a substantial amount in forgone tax revenues. In practice, this means that a reward TIP would only be feasible when tax cuts were being considered. Since inflation and economic growth tend to drive up average effective tax rates, however, periodic tax reductions will be feasible if the share of Federal spending in GNP is kept from rising. Therefore, the key budgeting issue posed by a reward TIP is its effectiveness, compared to other forms of tax reduction, in meeting economic goals.

One difficult problem that must be addressed in designing a TIP is the administrative burden it would impose on private firms and on the government. A TIP limited to a few thousand large firms with computerized personnel records would have much smaller public and private administrative costs than a TIP that included millions of small firms.

But limiting a pay TIP to large firms seems very unlikely to secure the kind of support needed to enact and operate a successful incomes policy. A limited reward TIP would be vigorously opposed by workers in small firms, who would argue, rightly, that they were being deprived of a potential tax cut. But a limited penalty TIP would tend to reduce the real income of workers in large firms and would be vigorously opposed by large firms and large unions.

A second issue in the design of a pay TIP is whether the penalty or reward should be a single amount based only on the wage increase being above or below the standard (hurdle TIP), or whether it should be graduated according to the difference between the standard and the actual increase (continuous TIP). A hurdle TIP only encourages firms and workers to have pay raises below the standard. It provides no direct incentive to lower pay raises that were already below the standard or, realistically, to reduce pay raises that were far above the standard. In contrast, a continuous TIP whose penalty or reward depended on the difference between the standard and the actual pay raise would provide an incentive to lower all pay increases. Lowering a pay raise that was above the standard would result in a smaller penalty. Lowering a pay raise that was already below the standard would mean a larger reward.

The main advantage of a hurdle TIP is administrative. Under a hurdle TIP, firms that expected to grant pay raises above the stand-

ard or that thought the administrative costs of compliance were too high would not be required to keep records. In contrast, under a continuous TIP that penalized firms or workers above the standard as well as rewarded those below, all firms would have to keep detailed records and would have to file additional schedules with their tax returns.

A reward-only continuous TIP would eliminate record-keeping requirements for noncomplying firms, and, as emphasized above, it would also be more equitable than a continuous TIP that included penalties. Such a TIP could offer tax credits, for instance, of 3, 2, or 1 percent of earnings, to employees of firms with average pay raises that did not exceed 50 percent, 75 percent, or 100 percent of the standard. However, even this simple continuous TIP would probably generate more disputes than a hurdle TIP, since firms would have incentives to understate their pay increases to appear to be in a lower bracket. Under a hurdle TIP, only firms near the standard would face such incentives.

The final major issue in designing a TIP is whether it should be permanent or temporary. The answer seems to be that a permanent TIP would not be feasible because of the distortions it would create by discouraging changes in relative wages. A TIP might introduce further distortions as people changed their behavior to circumvent the intent of the policy while remaining technically in compliance with the standard. For a while the distortions created by a carefully designed TIP would probably be small. But as relative prices and wages wandered farther from equilibrium levels, the distortions would become larger and the effects on inflation smaller. The economic costs from the distortions of an effective temporary TIP would be acceptable when balanced against the larger costs of relying solely on demand restraint to lower inflation. Because the distortions would build up over time, however, the costs of a permanent TIP would eventually exceed benefits.

On balance, given all the foregoing economic and administrative considerations, a temporary hurdle TIP—a tax credit to groups of workers whose average pay increase does not exceed a specified standard—seems superior to the other variants. Because keeping records and complying with the standard would be voluntary in this type of TIP, firms that found the administrative costs too high could choose not to participate. As with all forms of TIPs, relative wage changes could still occur in response to economic and other developments, although increases in excess of the standard would "cost" workers the TIP tax credit. The efficiency costs would be small at first, but over time the distortions of the TIP would rise and its effectiveness would fall.

Together with a "jawboning" campaign aimed at producing widespread compliance with the standard by lowering expectations of inflation, such a TIP could lower the rate of inflation. Without jawboning, the cost of inducing compliance among workers with anticipated pay raises far above the standard would be prohibitive. Even workers who expected pay raises near the standard might be reluctant to sacrifice part of a pay raise that might be built into future wages in exchange for a small tax credit that only lasted for 1 or 2 years. The major appeal of wage moderation is that if everyone cooperates by accepting a smaller wage increase, the lower nominal wage gains will be matched by lower price increases. Real wages will not fall, but inflation will. A TIP alone cannot provide sufficient economic incentives to make a low wage increase more attractive than a large one. However, with public appeals to moderation and clear evidence of fiscal and monetary restraint, a TIP can contribute to slowing the inflationary spiral.

Costs and Effects of a Reward Pay TIP

The preceding discussion concluded that the most desirable type of pay TIP would be a temporary hurdle type that provided a reward for keeping pay raises below the standard. To examine the possible usefulness of such a TIP in dampening inflation, the Council of Economic Advisers attempted to estimate the costs and effects of a reward TIP open to all employees, public and private. The reward was assumed to be a fixed percentage of wage income, up to the maximum social security wage base of $29,700. It was also assumed to be taxable and to be refundable to workers whose income tax liability was less than the reward. The average rate of wage increase in the absence of a TIP was assumed to be 9.7 percent.

The probability that a group of workers would accept a wage increase at or below the standard was assumed to depend upon the size of the reward and the relationship of the group's potential wage increase to the standard. The smaller the potential wage increase relative to the standard and the greater the reward, the higher the probability of compliance. The results of this estimating procedure obviously depend very heavily on the specific relationships used to calculate the probabilities of compliance for various groups of workers. Since there is no historical experience on which to base these relationships, the estimates presented below are simply examples based upon a considered judgment of the issues.

The costs, effects, and compliance rates that would result from various combinations of standards and rewards were estimated under the assumptions mentioned above. Illustrative combinations of standards and rewards at two levels of cost to the Federal budget are presented in Table 7. These estimates suggest three things. First, for a

given standard, as the reward and the cost rise, so does the reduction of wage inflation. Second, there is some tradeoff between standard and reward. That is, a program with a high standard and a low reward may cost the same as a program with a lower standard and higher reward. Third, for a given budgetary cost, a low-standard, high-reward combination tends to be more effective in reducing wage inflation than a high-standard, low-reward combination. The selection of that combination may create a problem of credibility. A TIP that is relatively effective in restraining pay increases for a given cost will tend to have lower compliance rates than a program with a higher standard and lower reward but which has less of the desired effect on compensation. This happens because higher standards put more people in compliance who do not have to modify their wage behavior.

TABLE 7.—*Estimated effects and compliance rates of various pay TIPs*

Standard — Reward (percent)	Compliance rate (percent)[1]	Effect on wage inflation (percentage points)
$12 billion budgetary cost:[2]		
7 — 2½	50.2	−0.93
7½ — 2¼	55.9	−.87
8 — 2	61.8	−.79
$16 billion budgetary cost:[2]		
7 — 3	54.6	−1.09
7½ — 2¾	59.8	−1.01
8 — 2½	65.3	−.91

[1] Percent of workers in establishments that have an average pay raise less than or equal to standard.
[2] Net tax expenditure less reduction in Federal compensation. Federal Government pay increase assumed to comply with standard—reduced from assumed economy-wide wage increase in absence of pay TIP.

Source: Council of Economic Advisers.

A TIP should be judged not only on its initial impact, but on its full effect over a 2- or 3-year period. A TIP continued for 2 years with a reduced pay standard in the second year could make a significant contribution to lowering inflation.

PRICE TIPS

Experience with incomes policies here and abroad, including the pay and price standards, suggests that a pay TIP is easier to administer and likely to cause fewer distortions than a price TIP. Nevertheless, a price TIP may be a necessary complement to a pay TIP because restraints on pay alone, even with a reward TIP, might appear inequitable. Furthermore, a price TIP could speed up the effect of a pay TIP by shortening the lag between the lowering of pay increases and their effect on price increases.

It would be unrealistic to set a single price standard for all firms. Productivity growth among industries varies substantially, as do changes in the prices of raw materials and other costs of production.

Recognizing this, CWPS in 1978 established a price deceleration standard which called for all firms to reduce the rate of their average price increases in the program year by one-half percentage point below their increases in a base period. Systematically different movements in productivity and other cost elements among firms and industries should be at least roughly reflected in their base year experience. CWPS found, however, that it had to permit firms to devise various ways of adjusting for uncontrollable cost increases and had to provide separate standards for certain industries, like retailing and food processing.

For several reasons, prices are more difficult to measure than pay. In some industries, such as wholesale and retail trade, prices for the same item vary from week to week. Some firms also give quantity discounts, so that prices for the same item vary from customer to customer. Even if the price of each item did not fluctuate, a small store with only a few employees may sell thousands of different products. Such a firm might have little trouble with the paperwork necessary for a pay TIP, but a price TIP would probably be beyond its administrative capabilities.

Furthermore, a price TIP would face problems posed by new products and quality change in old products. Since new products do not have old prices, no price increase can be calculated for them. Instead, a price standard might have to be based on the firm's average markup over input costs or on the prices of similar products sold by the same firm or other firms. A related issue is the treatment of quality changes. Disregarding these changes might be the best solution for a temporary price TIP, even though doing so would tend to discourage innovation. Alternatively, a program that exempted goods whose quality had changed, and therefore allowed price increases above the standard, would encourage minor product changes that did not really increase quality. Finally, products whose quality improved could be treated like new products, with price increases based on average markup or on the price changes of similar goods.

A price TIP would have to allow firms to pass through to consumers certain increases in the cost of their inputs. For instance, a utility company could not be expected to keep price increases below a TIP standard for long if the price of the oil it used to generate electricity suddenly doubled. To treat the utility fairly, a price TIP would have to allow the firm to raise electricity prices to cover the increased cost of oil. The problem in designing a price TIP is to decide which costs should be granted exemptions, while still encouraging firms to substitute cheaper inputs for more expensive ones.

Given the greater complexity of devising a workable price standard, a price TIP should probably levy penalties and be confined to

large firms. Even among large firms it may be desirable to exempt industries like retailing, in which competition is likely to keep average prices in reasonable relationship to costs. Market forces also make it unlikely that exempting small firms and competitive industries would lead to substantial inequities or to a failure to pass on to consumers the benefits of wage moderation.

CONCLUSIONS

There are no costless ways to reduce inflation. Using demand restraint alone imposes very large costs of forgone output and unemployment for modest reductions in inflation. A successful TIP can shift more of the effect of demand restraint from output to prices and thus can cut substantially the costs of reducing inflation. Although a TIP would itself impose administrative and efficiency costs on the economy, the costs for a short period of time would be small. They would surely be outweighed by the benefits in reduced inflation and lower unemployment that a TIP would bring.

It is useful to distinguish between two broad types of TIP, each of which would have quite different economic objectives. The *first* would be a continuous TIP that would be made a permanent part of the tax code and that would set graduated rewards and penalties according to the size of a firm's wage (and possibly price) increases. Such a TIP would be an attempt to make a major and permanent change in the market system so as to encourage less inflationary wage and price behavior on the part of individual firms. This chapter has suggested that the administrative problems and the distortions introduced into the wage structure would tend to grow over time, while the effect on inflation would decline. Thus, the costs of a permanent wage TIP would soon exceed its anti-inflationary benefits.

A *second* form would be a temporary hurdle TIP based on rewards for wage moderation and would be part of a broad public campaign for voluntary restraint in wage and price increases. The objective of such a TIP, perhaps applied for 2 successive years, would be to provide several downward shocks to the inflationary process, in effect reversing some of the upward shocks which contributed to today's inflation rate. Although such a TIP would also involve administrative costs and distortions in labor-market behavior, these costs would initially be far less than the benefits of the TIP in shortening the period of restraint and slow growth needed to reduce inflation.

As emphasized earlier, a TIP cannot substitute for demand restraint. The latter must also be present; otherwise, any gains produced by a TIP are likely to vanish quickly under the pressure of excess demand. Since a reward TIP would reduce budget revenues like any other tax cut, it must fit into a budget plan that makes tax cuts possible. But if the growth of Federal spending is restrained, pe-

riodic tax reductions will be both feasible and necessary in the years ahead as inflation and economic growth push taxpayers into higher brackets and raise average effective tax rates.

TIPs are novel, and most people are unfamiliar with either the opportunities they present or the difficulties they pose. It is therefore highly unlikely that a TIP could take effect in 1981. But it would be useful for the public in general, and the Congress in particular, to begin evaluating the pros and cons of TIPs so that when the time comes for the next round of Federal tax cuts a TIP program will be seriously considered.

INCREASING INVESTMENT, SUPPLY, AND PRODUCTIVITY

Economic policy must place greater emphasis on supply-oriented measures during the decade of the 1980s for a number of reasons. First, an increase in the growth of aggregate supply, and especially in the growth of productivity, can raise the growth of output and employment that is consistent with a steady reduction in inflation. Second, reducing this country's vulnerability to higher oil import bills will require a substantially increased investment in alternative energy sources over the next 10 years. Finally, even if inflation were not a problem, a speedup in the lagging rate of productivity growth would be essential to maintain the historic advance in our standard of living.

The remainder of the chapter summarizes what has been happening to productivity in the United States and briefly examines some of the reasons why the rate of productivity growth has declined. It also examines the need to increase the share of national resources allocated to capital formation and the Administration's response to that need. Finally, it discusses the relationship between demand- and supply-side policies, and suggests how they must be integrated.

PRODUCTIVITY

Advances in productivity are the foundation of advances in our standard of living. Increases in output per worker lead to increases in real income. Healthy increases in productivity can free the funds needed to improve the conditions of disadvantaged groups while lessening the need for sacrifice elsewhere. Thus, when productivity growth declines, these other advances also are delayed. But expectations of a rising living standard persist. They perpetuate demands for real income gains which can no longer be met and which leád to inflationary increases in wages and to growth in government spending.

Since the mid-1960s, the growth rate of labor productivity has been declining from its postwar highs. In recent years the decline has been so marked as to pose a major challenge to public policy. Be-

cause declining productivity growth brings with it prospects for slower improvement in our standard of living and contributes to inflation, a program to stimulate productivity growth must be a keystone of economic policy.

Table 8 summarizes the postwar history of growth in productivity. The data show a gradual worsening of the productivity decline as time has passed, with the last few years showing sharp declines. While just completed revisions of the data may change the magnitude and timing of the slowdown, its existence and its costliness are unarguable.

TABLE 8.—*Labor productivity growth, 1948–80*

[Percent change per year]

Sector	1948 to 1965	1965 to 1973	1973 to 1979	1978 IV to 1979 IV	1979 III to 1980 III
Private business sector	3.2	2.4	0.8	−0.9	−0.1
Nonfarm	2.6	2.2	.6	−1.1	.1

Note.—Data relate to output per hour for all persons.
Source: Department of Labor, Bureau of Labor Statistics.

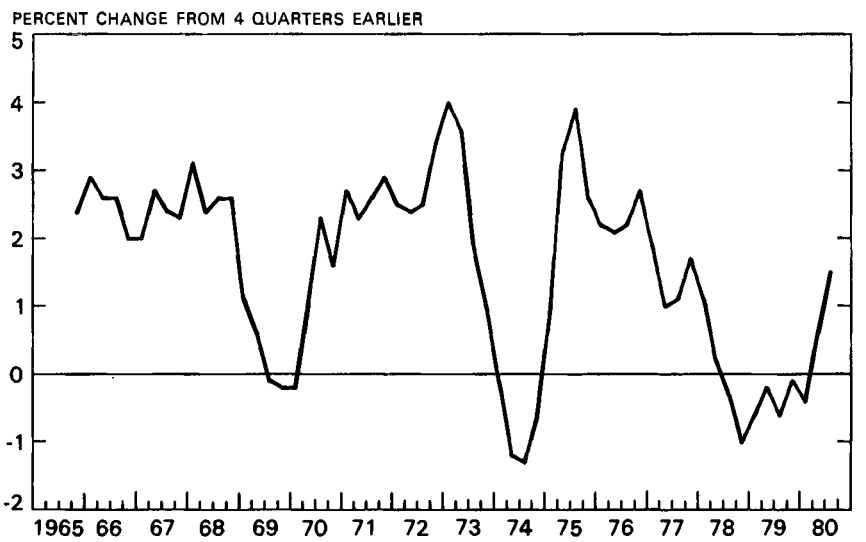
Some of the decline in productivity results from the way we measure it. In particular, productivity measurement counts as an input the costs of governmental and private actions to ensure a cleaner environment, a healthier workplace, and safer consumer products, but it does not count the benefits of these actions as forms of output.

It is difficult to interpret measures of productivity such as those in Table 8 without first distinguishing between changes caused by the business cycle and changes caused by longer-term factors. Because it is costly to hire or to fire, businesses typically do not reduce their work force proportionally when demand slackens or increase it proportionally when demand is expanding. Chart 4 presents the recent history of productivity growth after correction for these cyclical influences. As the chart vividly shows, productivity grew very slowly during most of the years since 1973, and on several occasions actually declined.

It would not be surprising to discover that the slowdown has many causes. Measured productivity growth is a distillation of a number of changes and influences. Many researchers have been in agreement that a number of factors have contributed in roughly equal magnitude to the slowdown. These factors have been discussed in past *Reports*. In addition to increased governmental regulation, particular attention has focused on increases in energy prices, declines in the rate of growth of capital relative to labor, and decreases in spending on

Chart 4

Productivity Adjusted for Cyclical Variation



NOTE.— DATA ARE FOR PRIVATE NONFARM BUSINESS, ALL PERSONS.
SOURCE: COUNCIL OF ECONOMIC ADVISERS.

research and development. But there has also been widespread agreement that a large portion of the slowdown has not yet been explained.

INVESTMENT NEEDS

One of the causes of the decline in productivity growth has been the decline in growth of the capital stock relative to the labor force. Because a rising share of capital formation has been devoted to adjustments to cope with higher energy prices and to complying with environmental and safety regulations, a diminishing fraction of investment has been available to effect gains in productivity. Although these developments may not have been the primary causes of the productivity slowdown, increasing capital formation would nevertheless be an effective way of reversing the slowdown. Many of the factors affecting productivity cannot be directly or immediately influenced by the government, but economic policy—especially tax policy—can influence the pace of capital formation.

As a general rule, an increase in the amount of capital invested per worker is associated with an increase in output per worker—i.e., in increased productivity. There are two reasons for this. First, processes that generate more output per worker usually require more capital per worker, and second, increasing the ratio involves putting newer capital into place. The newer capital is likely to embody more ad-

vanced technology and will therefore increase the efficiency of the capital stock.

During the decade of the 1960s the capital-labor ratio grew at an average rate of about 3 percent per year; over the last 5 years, however, the ratio has remained roughly constant. This development has been due to both the slower growth in the capital stock and to the more rapid growth in employment and hours worked (Table 9). The 1974–79 deceleration in the growth of capital is somewhat at odds with the rough stability in the investment share of GNP over the same period and requires some explanation. A greater share of investment is now being spent on relatively short-lived assets. The ratio of investment in equipment to investment in nonresidential structures has increased in recent years. The result is that each dollar of *gross* investment now yields less *net* investment because the capital stock is depreciating more rapidly.

TABLE 9.—*The investment share, and growth in the capital-labor ratio, 1949–79*

Period	Real business fixed investment as percent of real GNP[1]	Percent change, average annual rate (end of year to end of year)				
		Net capital stock (nonresidential)[2]	Employment[3]	Hours[3]	Capital-employment ratio	Capital-hours ratio
1949–59	9.1	4.0	1.1	0.7	2.9	3.2
1959–69	9.8	4.6	1.6	1.2	3.0	3.3
1969–74	10.5	4.2	1.2	.5	2.9	3.7
1974–79	10.3	3.0	3.1	2.8	−.1	.2

[1] Average annual investment–GNP ratio, in percent.
[2] Net fixed nonresidential business capital, 1972 dollars, end of year.
[3] For private business, all persons. End of year calculated as average of year's fourth quarter and following year's first quarter.

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

To restore the growth of the capital stock per worker to that of the 1960s would require that the share of investment in GNP rise by at least 1 percentage point from its recent average of about 10½ percent. Such a development should, at a minimum, restore the productivity growth lost from this source. Further improvement would require yet more investment.

Apart from the necessity of improving the productivity growth rate, there are other reasons why future economic policy should encourage increased investment. Last year's *Report* discussed these needs in detail. The average age of the capital stock at the end of 1979 was 7.1 years. This suggests that much of our plant and equipment was put in place when oil prices were much lower than they are now. Higher energy prices have shortened the service life of older and less energy-efficient capital and made it in the national interest to speed up its replacement. The magnitude of these investments is difficult to

estimate, but it could represent perhaps another 1 percent of GNP per year.

Additional investment requirements arise from the need to continue domestic production of oil, coal, and natural gas at sharply higher investment costs per unit of energy produced, and to expand the investment devoted to alternative energy sources. Conservatively estimated, they amount to about another one-half percent of GNP.

During the late 1960s and early 1970s, before the first surge in oil prices, real business fixed investment averaged about 10½ percent of GNP. In 1978–79, the investment share averaged slightly higher, around 10¾ percent, probably reflecting additional investment in the energy industries. On the basis of a rough judgment, continuation of investment in the neighborhood of 10½ percent of GNP would meet the "normal" requirements of a moderately growing economy and hold the capital stock per worker approximately constant, as it has been in the past 5 years. But it would not provide for an expansion of capital per worker or for the Nation's increased needs for energy investment.

Meeting these objectives will require substantial additional investment. Since the growth of aggregate demand and total GNP will be constrained in the years immediately ahead by the need to reduce inflation, the extra investment cannot come from additional GNP growth but will have to displace consumption or government spending, the other major components of GNP. According to the estimates presented earlier, the share that investment takes in total output will have to rise substantially from a normally expected 10½ percent or so to 12½ to 13 percent, and the combined share of consumption and government spending will have to fall by a corresponding amount.

It is virtually certain that such a large increase in the investment share will not be forthcoming without deliberate government policies. The major elements of such a policy lie in a combination of Federal tax measures and expenditure control. In the future, Federal personal tax receipts will take a steadily increasing share of personal income as inflation pushes taxpayers into higher brackets. As oil prices are decontrolled, revenues will be transferred from purchasers—who will pay the higher prices—to the Federal Government through the windfall profits tax. For both of these reasons the ratio of taxes to GNP will tend to rise and the growth of consumption will be depressed. If Federal expenditures are controlled so that their share of GNP does not rise, periodic tax reductions will be possible. Indeed, they will be necessary to prevent even moderate economic growth from being choked off. If a sizable fraction of those tax reductions are of a kind which concentrate on encouraging investment

rather than restoring the growth of consumption, the share of investment in GNP can be raised. Of course, if the share of Federal expenditures in GNP is not merely stabilized but reduced, the room for increasing the investment share of GNP through investment-oriented tax cuts will be even larger.

Within this framework, tax reductions designed to increase the share of investment in GNP must meet two requirements: They must increase the demand for investment goods, and simultaneously they must increase saving—i.e., they should not increase consumption. These two requirements are closely related, but they are not the same. There are a number of measures that might seek to increase saving but have little if any effect on the volume of business investment. Forgoing tax cuts, letting effective tax rates increase, and creating a large Federal budget surplus, for example, would appear to be one way of increasing national saving. Although such a policy would make possible a decline in interest rates, it would also create a substantial fiscal drag, reduce economic growth and private saving, and probably yield no increase in business investment spending. Conversely, measures that increase investment demand without making room for it with an increase in saving will yield an excessive growth in total demand and renewed inflationary pressure. Both aspects of the problem are important. Given the determinants of investment, what tax policies can best increase the demand for investment goods? What form of tax reductions are most likely to be channeled into saving rather than consumption?

INVESTMENT DETERMINANTS AND INFLATION

Expectations about future growth are critical in determining the volume of investment demand for the economy as a whole. But the essence of the earlier discussion was that investment needs to increase by more than the amount that would be associated simply with a normal expansion of output. A number of factors influence the amount of capital that firms want to use to produce a given amount of output. Chief among them are the attractiveness of the return on capital investment as compared with other uses of investors' funds, the perceived riskiness of corporate investment, and the cost and availability of capital.

One lesson that has been learned in recent years is the deleterious effect of inflation on investment. High inflation rates increase the perceived riskiness of investment, and this increased uncertainty makes planning for future capital needs more difficult. The information about relative demand that is contained in price changes becomes clouded when inflation is high. In addition, increasing rates of inflation are ordinarily accompanied by the expectation of sharply

higher interest rates and monetary stringency. The expected slowing of growth in demand reduces the incentive to add capacity.

But by far the most important effect of inflation on investment is its impact on tax accounting provisions and depreciation allowances. Depreciation is a cost of earning income from fixed capital assets. This cost is the reduced value of the asset due to use, aging, and obsolescence. The depreciation allowed for tax purposes is based on the historical cost of an asset. When inflation occurs, allowable depreciation is reduced relative to the cost of replacing the asset at today's price. Inflation therefore raises the tax on capital and reduces the rate of return on investment, and this problem worsens as the rate of inflation increases.

The inflation-induced increase in the tax on income from business plant and equipment is partly offset by the inflation-induced reduction in the tax burden of borrowers. Firms are allowed to charge the full value of their interest payments against income, even though a portion of these higher interest payments amounts to the repayment of real capital to lenders. The effect on the return to investment of this "excess" deduction varies with the proportion of investment that is debt-financed. It also varies with the extent to which inflation is reflected in interest rates. Since an important part of investment is not debt-financed, it is clear that inflation's tax-increasing impact on the value of depreciation allowances outweighs the tax-decreasing impact of excess deductions on the return to business investment.

Some have suggested that the inflation-induced distortion of tax depreciation could be corrected by indexing the value of existing business assets to allow replacement—rather than historical—cost depreciation. But indexing the value of assets would ignore the interest rate offset described in the prior paragraph. Moreover, as with all indexing schemes its administrative and accounting problems would be quite severe, and almost any simple index imaginable would introduce distortions of its own. For these and other reasons, indexing is not an attractive means of correcting the inflation-induced distortion in depreciation allowances.

TAX MEASURES TO INCREASE INVESTMENT

Policymakers have three principal measures to influence investment through the tax system: changes in depreciation allowances, changes in the investment tax credit, and changes in the corporate income tax rate.

Since the effect of inflation in depressing the value of depreciation is such an obvious factor in the recent decline in after-tax rates of return on capital assets, the liberalization of depreciation allowances is an attractive way to enhance investment. It not only provides an overall incentive for investment but, if carefully designed, it can also

correct some of the distortions in investment that accompany inflation. Under proposals for accelerated depreciation, the allowable depreciation on capital assets would be increased. This would permit firms to write off their capital purchases faster. The changes would affect two determinants of business investment. First, they would increase the after-tax yield of capital investment, and thus its attractiveness. Second, they would increase business cash flow and thereby supply a portion of the funds needed to finance additional investment.

Increases in the investment tax credit would have a similar impact on investment incentives. The investment tax credit reduces the purchase price of eligible equipment. It thus provides a direct incentive by raising net return and by increasing after-tax cash flow.

A reduction in corporate income tax rates, on the other hand, influences investment by increasing after-tax profits. This tends to be a less effective stimulus to investment than either accelerated depreciation or increases in the investment tax credit because it has a smaller impact on the net return from new purchases of capital assets. In addition, depreciation liberalization or an increased investment tax credit are only available to a firm to the extent it invests, but a corporate tax reduction would be available whether investment is undertaken or not.

The President's Economic Revitalization Program contains several elements that would significantly improve the outlook for business investment by offering direct incentives to invest in new plant and equipment as well as support for business cash flow. The two major investment incentives in the program are expansion in the coverage of the investment tax credit and a simplified and liberalized form of depreciation allowances.

The proposed changes in the investment tax credit would allow firms to claim full credit for all equipment purchases, even short-lived assets that currently are allowed only a portion of the tax credit. In addition, the investment tax credit would be made partially refundable. Under the current law, the credit can be used to offset the first $25,000 of tax liabilities plus up to 70 percent (rising to 90 percent by 1982) of liabilities in excess of $25,000. But the proposed change would allow firms to claim 30 percent of the value of the credit even if they had no tax liabilities for the year. In this way, firms with substantial investment needs but with little or no current earnings would be supported in their efforts to rejuvenate and expand their capital assets. Among these are both younger and smaller firms that are just beginning to grow and larger industries undergoing transition, such as autos and steel.

The proposal for tax depreciation—the Constant Rate Depreciation (CRD) proposal—would allow firms to accelerate depreciation on new equipment and new structures. Under this proposal, the rate of depreciation allowable over the life of the typical capital asset would be roughly 40 percent larger. In addition, the CRD proposal would greatly simplify depreciation accounting.

The President's proposed depreciation reforms share certain common features with two recent tax proposals: the bill reported by the Senate Finance Committee last fall, and the so-called "10-5-3" proposal. Both proposals would liberalize depreciation allowances by shortening the tax life of capital investments. Both would also simplify business accounting by significantly reducing the number of asset categories that firms would have to keep track of. There are important differences, however. In the President's proposal the reductions in tax life have been designed so that there would be, on average, a similar increase in depreciation allowances across all kinds of assets. The "10-5-3" proposal provides very large increases in the allowed depreciation for longer-lived assets but little or no change in the depreciation allowed for many shorter-lived assets. The tax life for structures would be reduced from an average 30-35 years to just 10 years, but, for example, automobile purchases would be allowed a lifetime of 3 years, exactly the same as under current tax laws. Because the "10-5-3" proposal would grant uneven benefits across asset types, the demand for investment goods would be significantly skewed from what would be dictated by economic considerations alone. In addition, the "10-5-3" proposal includes a complex phase-in schedule that may have the perverse effect of delaying capital investment.

Late in the last session of the Congress, the Senate Finance Committee reported a tax bill which also included a depreciation proposal. The Committee's bill would have established a limited number of asset classes with shorter tax lives than under current law. While the Committee's proposal differed from the open-end accounting of depreciation embodied in the President's proposal, its impact on the value of depreciation and on investment incentives would have been closer to that of the President's approach than is the "10-5-3" proposal.

THE IMPACT OF THE ADMINISTRATION'S INVESTMENT INCENTIVES

The investment tax credit and depreciation proposals in the Economic Revitalization Program would reduce the cost of capital to firms by roughly 5 percent and increase corporate cash flow by $9 billion during 1981 through reduced tax liabilities. By 1985 the increases in cash flow would total nearly $30 billion annually. It is anticipated that business fixed investment will be 5 to 10 percent

higher than it would otherwise be by the end of 1982, with smaller additional gains thereafter.

These estimates are derived from statistical relationships which link business investment demand not only with investment incentives, such as accelerated depreciation or increases in the investment tax credit, but also with expected capacity needs and demands for output. According to the historical experience which underlies these estimates, increases in investment demand can be affected by accelerated depreciation even when capacity utilization is relatively low—as it is forecast to be over the near term (Chapter 3). Indeed, the recent historical evidence offers additional support for the view that investment spending could proceed at a rapid pace without extraordinary tightness in industrial capacity. During 1976, the first full year of growth following the 1974–75 recession, real business fixed investment grew 5.3 percent despite the relatively low (79.5 percent) rate of manufacturing capacity utilization during that year. In the following year, growth in real business fixed investment was 11.9 percent, while the utilization rate rose to only 81.9 percent.

SAVING

Any increase in the investment share of GNP must be accompanied by a corresponding increase in the saving share of GNP. Total national saving comes from three sources: individuals save out of their personal income; businesses retain, and thereby save, some of their profit income; and governments save when they run a budget surplus, or dissave when they run a budget deficit. It is total national saving that supports total investment. A portion of saving flows into residential investment, investment in inventories, and net foreign investment. The remainder is available to finance business purchases of plant and equipment.

The Federal Government has numerous policy options for changing the level of national saving and thereby supporting a higher level of aggregate investment. But it is important to realize that no one sector works in isolation. A given sector's increase in saving may be partially or fully offset by another sector's dissaving.

Personal tax cuts designed to increase specific types of saving, such as an increase in the amount of tax-free interest from passbook savings accounts, are likely to be the least effective ways to increase total saving. They will increase the flow of saving into those instruments whose after-tax returns have been raised, but they will do so primarily at the expense of those forms of household saving whose after-tax returns have not been raised. They will reshuffle personal saving but increase its amount very little.

General reductions in personal tax rates would increase personal income, which would itself lead to higher saving. In addition, the

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higher after-tax return on saving may induce still further increases in saving. This is more likely to occur if the personal tax cuts are directed at higher-income individuals who tend to save relatively more of their additional after-tax income. But there is substantial evidence that, in any case, the personal saving rate responds very little to changes in rates of return or in the tax structure. A large part of the personal tax reduction would therefore go toward increasing consumption.

The most effective avenue at the disposal of the Federal Government to increase the volume of saving is to reduce taxes on business income. Cuts in business taxes would lower government saving, but a large part of the tax cut would flow into business saving. Business after-tax cash flow would be increased. In time, part of the increased cash flow would lead to higher corporate dividends. A very large part, however, would be allocated to an increase in retained earnings—i.e., saving. Evidence suggests, for example, that corporations save more than 50 cents from every additional dollar of after-tax income. Furthermore, some portion of any dividend increase would find its way into personal saving. By contrast, giving the tax cut directly to households would have a smaller effect on saving because households are likely to save a much smaller fraction of every dollar of additional disposable income.

It seems wise, then, to focus government efforts on the sector most likely to allocate a large part of any tax relief to saving—business. A business tax cut would result in relatively large saving, and incentives to expand investment demand would simultaneously be improved. It is this approach that lies at the heart of the President's Economic Revitalization Program.

THE INTEGRATION OF DEMAND-SIDE AND SUPPLY-SIDE POLICIES

Tax reductions which induce additional saving and investment will contribute to faster productivity growth, and this in turn will help reduce inflation. A number of critical questions arise, however, in determining the appropriate type, magnitude, and timing of any tax reductions. First, what kind of an increase in productivity might reasonably be expected from investment-oriented tax cuts of various sizes, and what would be the associated reduction in inflation? Second, to what extent would the improvements in productivity and other supply-creating aspects of a tax reduction offset the increase in aggregate demand they would cause? More generally, how would tax cuts aimed at increasing supply fit into the framework of fiscal restraint that is required to reduce inflation?

EXPECTED PRODUCTIVITY GAINS

Although the effect on investment from a given loss of tax revenues would vary with the form of the reduction (accelerated depreciation, larger investment tax credit, or lower corporate income tax rates), the evidence suggests that each dollar of reduction in annual business taxes might, at the outside and after several years, generate slightly more than a dollar in business fixed investment. To increase investment by 10 percent, a business tax reduction of at least $30 billion—or about 1 percent of GNP—would be necessary. This larger volume of investment, maintained from 1981 through 1985, would increase the capital stock by about 5 percent after allowing for depreciation. On the basis of the historical relationships between output and capital, such an addition to the capital stock might generate a total increase in the level of productivity of at most 1.5 percent by 1985, or about 0.3 percent per year. In view of the declining rate of productivity growth which the Nation has experienced in recent years, however, this small improvement would be significant.

Such a rise in the productivity growth rate would not be likely to induce a faster rise in money wage demands. Therefore, since the growth of unit labor costs is equal to the increase in compensation per hour minus the rate of growth in productivity, the faster productivity growth rate should lead to a slower rise in costs and prices. In turn, a slower rise in prices would help to reduce the growth of wages, leading to a still further slowdown of inflation. All told, an investment-oriented tax cut amounting to about 1 percent of GNP might produce a 0.3 percentage point rise in productivity growth that would translate, after several years, to just over one-half percentage point reduction in the inflation rate.

DEMAND VERSUS SUPPLY RESPONSES TO TAX CUTS

Tax reductions have two principal effects. On the one hand, individuals and firms will buy more goods and services. As a tax cut is spent and respent throughout the economy, the resulting increase in nominal GNP will exceed the original tax cut. As a result of this multiplier process, aggregate demand will rise by more than the tax cut. But tax cuts also increase the supply of goods and services. Since lower tax rates allow individuals and firms to keep a larger fraction of their income after taxes, the lower rates affect incentives to work, to save, and to invest the savings, increasing potential GNP.

Although the magnitude of the multiplier varies according to the nature of the tax cut, aggregate demand typically rises by about twice the size of a reduction in taxes. Thus, a tax cut equal to 1 percent of GNP will increase aggregate demand by about 2 percent. To match the increase in demand, a 2 percent increase in supply would also be

required. To the extent that its supply response is less than the additional demand it creates, any tax reduction adds to the pressures of demand on the rate of inflation.

But there are two ways in which such tax cuts can be made while still restraining demand. First, tax reductions may offset increases in other taxes. As discussed earlier, inflation pushes taxpayers into higher tax brackets, so that the average effective tax rate—the ratio of tax revenues to GNP—rises. Consumption is depressed and economic growth reduced. In the years ahead, periodic tax reductions will therefore be both possible and necessary to keep aggregate demand from falling. Second, a tax reduction accompanied by Federal spending reductions of roughly the same magnitude will not change aggregate demand; hence, even if the supply response to a tax cut is smaller than the demand response, inflationary pressures will not be generated.

Thus, it is clear that the design and timing of supply-oriented tax cuts depend importantly on the specific relationship between the demand-side and supply-side responses. If such tax reductions fail to generate enough supply to offset the additional demand they create—and the evidence discussed below suggests this to be the case, particularly for personal tax reductions—they must then be integrated like any tax cut into policies of demand management.

THE SUPPLY-SIDE RESPONSE TO PERSONAL TAX CUTS

A 10 percent reduction in marginal tax rates on individuals (approximately a $30-billion personal tax cut in 1981) would increase the total demand for goods and services by $60 billion, or 2 percent of GNP. It could also lead to increases in individual work and saving in response to the lower tax rates and thereby increase potential GNP. How much of the increase in demand would be matched by such increases in supply?

The Supply of Labor

The additional production that results from lowering taxes on labor income depends both on changes in the quantity of labor supplied (i.e., the total number of hours worked) and on changes in the average productivity of labor.

Higher after-tax wages make work more attractive. This encourages new entrants to join the labor force and those already employed to work longer hours. Since after-tax incomes have risen, however, people can also afford to work less—to take longer vacations or to shorten their workweeks. Whether the former effect would or would not exceed the latter effect is hard to predict. A preponderance of the evidence suggests that for adult men the two effects approximately offset each other; that is, a cut in income taxes increases the

supply of adult men in the work force only slightly, if at all. Women, on the other hand, and particularly married women, respond much more strongly to higher wages. In the past, the number of adult women in the work force may have increased by as much as 1 percent for every 1 percent increase in take-home pay. Although women are more responsive to changes in their wages than are men, men still outnumber women in the labor force and on average earn substantially more. Therefore, a reduction in personal income tax rates would increase the *total* supply of labor only slightly.

Whether an increase in the labor supply would be accompanied by an increase in productivity is uncertain. While most business investment enhances productivity, an increase in the labor supply would not improve productivity unless it increased the average quality of work performed or the intensity of effort. Productivity might actually fall as the supply of labor increased if the additional labor supply consisted, on balance, of less skilled or less experienced workers.

Alternatively, some have argued that the increased supply of labor from high-income, high-productivity workers would outweigh the increased supply from other workers, so that the average productivity of the labor force would rise. This could happen if high-productivity workers were more sensitive to a given percentage change in after-tax earnings, or if the tax reduction represented a larger percentage change in their take-home pay. Since high-income workers are a small fraction of the labor force, these influences would have to be large to alter total productivity significantly. Studies of high-income workers generally do not find them much more responsive to equal percentage increases in after-tax income. However, a 10 percent across-the-board reduction in tax rates would also mean a larger percentage increase in the after-tax earnings for these workers because their households are in high marginal tax brackets. A 10 percent tax cut is, therefore, likely to produce a somewhat larger change in the supply of high-income workers. Still, even in high-income households it is in fact second-income earners—generally those who have lower productivity—who are apt to be the most responsive to lower tax rates.

Balancing the two opposing forces—the lack of experience of new workers and the possibility of a greater-than-average influx of higher-income workers—it seems unwise to assume that the average productivity of the labor force will be improved by a personal tax cut.

Taking all the relevant factors into account, the limited response of the supply of labor and of productivity to a 10 percent reduction in personal income tax rates is likely to produce an increase in potential GNP of perhaps 0.2 percent to at most 0.6 percent. This result follows in part from evidence suggesting that such a tax cut would

induce an increase in labor supply between 0.3 and 1.0 percent. According to past relationships between labor and production, such an increase in labor supply would lead to the modest increase in potential GNP mentioned above.

The Supply of Saving

A reduction in personal income tax rates increases both the income out of which an individual worker can save and the after-tax return to saving. It would also tend to discourage borrowing by reducing the value of the income tax deduction for interest payments. If the increases in personal saving find their way into additional business investment, productivity will rise.

Most empirical studies have concluded that changes in personal income tax rates would have only a small effect on personal saving. At best, a 10 percent reduction in tax rates would increase personal saving less than 3 percent. This means that the saving rate—the average share of personal saving in disposable income, which over the last 5 years has averaged 5.7 percent—would rise by no more than 0.2 percentage point. The additional saving would at most be equivalent to only about 0.2 percent of GNP.

Even if every dollar of personal saving that resulted from a 10 percent tax cut were invested in business plant and equipment—and some, in fact, would flow into housing—the effects on output and on productivity would be small. If the tax cut and the higher saving continued for 5 years, the additional saving and investment would increase potential GNP by less than 0.3 percent and lead to a negligible increase in the annual rate of productivity growth.

This examination of likely responses thus suggests that even under the most optimistic circumstances, a 10 percent reduction in tax rates would not induce enough additional work, saving, or investment to offset more than a fraction of the 2 percent increase in aggregate demand that would accompany the tax cut.

BUSINESS TAX CUTS

It was pointed out earlier that a tax cut that liberalized the business depreciation allowance or increased the investment tax credit could, after a time, have a fairly substantial effect on the Nation's productive potential. Such a tax cut, amounting to 1 percent of GNP, could raise potential output by perhaps 1½ percent over a 5-year period.

This would still be less than the 2 percent rise in aggregate demand that would also be generated, however. More important, the increase in demand would come relatively quickly, most of it within 1½ to 2 years. The increase in supply, on the other hand, would occur very gradually. As a consequence, the tax cut would tend to

increase demand pressures, especially in the years immediately following it. While tax reductions that are effective in raising investment are essential in a long-term strategy to promote economic growth, business tax cuts, like personal tax cuts, must be designed to fit into an overall framework of fiscal restraint.

CONCLUSIONS

This analysis of the macroeconomic effects of Federal tax reductions suggests several conclusions for the development of fiscal policy:

First, specific investment-oriented tax reductions for business are likely to increase saving, investment, and productivity by a much more significant degree than cuts in personal income taxes.

Second, productivity-oriented tax reductions will yield improvements in the inflation rate that are helpful and significant, but still relatively modest in the context of a 10 percent underlying inflation rate.

Third, the supply response, while a critically important feature of any tax reduction, will be substantially less than the demand response, particularly in the short run.

Fourth, since reductions in both business and personal taxes will increase demand faster than supply, they must be designed and carried out in ways that are consistent with the demand restraint needed to reduce inflation.

It is sometimes alleged that the potentially inflationary effects of a large tax cut can be avoided if the Federal Reserve steadfastly pursues its goal of keeping the growth of the monetary aggregates within tight targets. But if taxes are reduced while the Federal Reserve pursues an unchanged monetary policy, aggregate demand will nevertheless increase, especially in the short run. The increase in demand would lead to a rise in interest rates that would dampen the increase in aggregate demand but not eliminate it. Additional inflationary pressure would then result.

A very large tax cut unaccompanied by the necessary spending cuts would lead to both an increase in inflation and a sharp rise in interest rates. Some, and perhaps all, of the stimulus to investment from tax reductions would be undone by the higher interest rates and the greater uncertainty engendered by a new round of inflation.

Monetary restraint is an absolutely essential element of inflation control and reduction. Tax measures focused on increasing supply can make a significant contribution. But there will be a continuing need for careful and prudent fiscal policies to restrain demand. In recent years the Nation has come to appreciate the potential value of supply-oriented tax policies. In the process of learning some needed lessons about supply-side economics, however, the Nation cannot

afford to forget its hard-learned lessons about the need for demand-side restraint.

The three central elements of a macroeconomic policy to reduce inflation and advance the Nation's prospects for healthy economic growth have been set forth in this chapter: maintaining a persistent and prudent course of demand restraint; putting in place an improved incomes policy using tax incentives to induce wage moderation; and increasing the share of the Nation's output going to investment. The next chapter deals with the challenge of inflation and growth at the level of individual markets and sectors. It concentrates on measures to increase the economy's flexibility and capacity for adjusting to change.

Carrying out these policies will require patience and, in the interim, some sacrifice. But if they are followed with persistence they promise a substantial payoff in improved economic performance.

TECHNICAL APPENDIX TO CHAPTER 1

MEASURING PAY INCREASES UNDER A TIP

Once the basic features of a pay TIP have been chosen, several problems in the measurement of average pay increases must be solved. These problems arise from changes in the composition of a firm's work force, from fringe benefits, and from multiyear union contracts with cost-of-living adjustments. Resolving these problems requires striking a balance among administrative convenience, equity, efficiency, and the effect on inflation.

COMPOSITION OF THE WORK FORCE

Like any well-designed tax, a successful TIP must use a measure of average pay increase that is unambiguous, that alters behavior in undesirable ways as little as possible, and that is fair in its treatment of different types of firms and workers. The simplest indicator of average pay—total wages received by a group of workers divided by the total number of hours they work—is a poor measure because it changes both with hourly wage rates and with the number of overtime hours. Even if wage rates increased by less than the TIP standard, an increase in the average amount of overtime, paid at a premium, could put the group out of compliance. Using this measure would therefore discourage overtime work, an undesirable distortion. A better measure would use straight-time wages divided by straight-time hours, with adjustments to reflect changes in the length of the standard workweek or the size of the overtime premium.

Because of possible changes in the composition of the group, however, a simple measure of straight-time wages divided by straight-

time hours also has drawbacks. For example, during a recession a firm may grant a pay raise far below the TIP standard and also lay off large numbers of low-seniority workers. Because low-seniority workers tend to have below-average wages, the remaining workers will have higher wages than the original group. Consequently, this measure of wage change may well show that the increase in average pay exceeded the standard even if no individual worker received such a large raise. Conversely, when firms hire additional low-seniority, low-wage workers during expansion, the group may appear to be in compliance even if all continuing workers receive pay raises above the standard.

This measure is also affected by changes in the skill-mix of the work force. If a firm increases the proportion of low-wage, less skilled workers in its work force, the measure will show a calculated wage increase less than the "true" wage increase. A decrease in the proportion of less skilled workers will show just the opposite. Because of these features, the measure also discriminates in favor of growing firms and against declining firms, since new workers are, on average, likely to be paid less than those already on the payroll.

More important, this measure introduces an element of uncertainty. A firm could agree with its workers to grant pay increases that met the standard—citing the TIP reward as an offsetting factor—and then unexpectedly discover at the end of the year that small changes in the composition of the work force had put the group out of compliance. Firms and workers who had negotiated small pay raises in anticipation of receiving a TIP reward or avoiding a penalty might find themselves above the standard, while others who had ignored the standards could be surprised to find themselves in compliance. An unpredictable measure is not only unfair; it also will have less effect, since firms and workers will tend to ignore the standard if they cannot be sure that small pay raises will result in compliance.

Data collected by the Bureau of Labor Statistics from a large sample of establishments suggest that significant changes in the composition of a firm's work force are common. As Table 10 shows, 22 percent of the workers in the motor vehicle industry were in establishments that experienced an increase in their calculated straight-time hourly earnings of more than 13 percent between December 1978 and December 1979. During this period the United Auto Workers' contract, which covered a majority of the workers in these establishments, provided for an increase of about 11 percent, including cost-of-living adjustments (COLAs). Therefore, most of the establishments with increases in calculated average hourly earnings larger than this must have experienced a change in the composition of their work force.

TABLE 10.—*Distribution of workers by percentage change in average establishment wage, selected manufacturing industries, December 1978 to December 1979*

Percentage change in average establishment wage	All manufacturing	Motor vehicles	Food processing
	Percent distribution		
Less than 0	5.1	5.9	8.5
0 to 6.9	18.6	7.8	24.8
7.0 to 9.9	27.4	19.3	28.6
10.0 to 12.9	25.4	44.8	17.8
13.0 to 19.9	17.2	13.7	13.2
20 and over	6.3	8.5	7.1

Source: Department of Labor, Bureau of Labor Statistics.

Additional evidence suggesting large shifts in the composition of the work force is provided by the percentage of workers in establishments who experienced actual declines in their average nominal wage. For all manufacturing, 5.1 percent of workers were in establishments that reported declining money wage rates, and 8.5 percent of those in food processing were in establishments that reported nominal wage declines. It is hard to believe that such a large percentage of workers were in establishments that actually cut the average nominal wage for their entire work force during a period in which the CPI rose by 13.3 percent.

Clearly, a satisfactory measure of wage changes will be one that is not affected by systematic changes in work force composition. The problem can be solved either by a wage index or by a measure that counts only the hours and payroll for those workers who were with the firm throughout the year. A wage index, like a price index, combines the wage rates for specific types of jobs into one measure. The weights used reflect the percentage of a firm's workers in each skill or seniority level. A wage index reflects the "true" average pay increase for all employees and is not affected by changes in composition or seniority. Such an index would be relatively easy to construct for many firms. Union contracts already set wage rates for specific jobs. Some large nonunion firms and many States and local governments also have pay scales that list the salary levels of workers in each job category and seniority step.

These union and nonunion pay scales could be used with the base period percentages of workers in each job category to calculate a firm's average pay raise, just as a price index is used along with a base period market basket of goods to measure price increases. To ensure that the firms did not give raises above the standard by promoting workers, rates of promotion above past experience would be included in the calculation of pay raises. Doing so, of course, may

reintroduce the problem of changing skill mix if the additional promotions reflect an upgrading of skills.

Nonunion firms that do not have pay scales could calculate their average pay raise from the wages and hours of those workers who continued to work for the firm throughout the year. Such a measure would not be affected by changes in the composition of the work force, since the wage rates of former or new employees would not enter into the calculation. Because firms generally hire new workers at the bottom and retire or lose workers from the top, the average pay raise for continuing workers will exceed the average pay raise for all workers in a firm with stable composition but high turnover. Therefore, measures for continuing workers must be adjusted to allow for promotions.

MEASURING FRINGE BENEFITS

A critical element in the measurement of pay increases is the treatment of fringe benefits. The cost of a given package of fringe benefits can increase for either of two reasons: because the package has become more generous (the employer is buying more services for the employees) or because the price of a given set of services has risen. For example, an employer who adds dental benefits onto the health insurance provided for employees would increase the cost of health insurance by improving the package of benefits. Health insurance premiums might also rise for a given set of benefits simply because medical care in general becomes more expensive.

Which increases in the costs of fringe benefits should the TIP include as increases in compensation? One approach is to include all increases in the cost of fringe benefits, both those that reflect higher prices for a fixed package as well as those that reflect improvements in the package. This would treat each dollar paid in fringe benefits exactly like a dollar paid in cash wages. Such an approach, however, would require extensive work to evaluate the cost of all benefits. Although determining the cost of fringe benefits purchased from other organizations, such as medical insurance, would be simple, determining the cost of other fringes, like unfunded pension benefits, would be more difficult. Another drawback is that firms and workers might object to being ruled out of compliance for cost changes they could not control, such as the cost of employer health plans.

An alternative treatment would be to exclude fringe benefits completely from the calculation of a group's average pay raise. This would involve the fewest administrative problems. It would, however, provide a strong incentive for firms to give all increases above the standard in the form of fringes rather than cash, since the group would be in compliance as long as cash remuneration did not increase by more than the standard. This would defeat the purpose of

the TIP and would also distort the structure of labor compensation for a long period.

A compromise solution would be to include only the cost of improvements in benefit packages. For example, the cost of new medical benefits would be charged against the standard but increases in the cost of existing benefits would not. This would reduce the difficulty of estimating the costs of some types of fringes without creating an incentive to divert all pay increases above the standard into benefit improvements. Although fringes would still be treated more generously than cash wages, this compromise would eliminate a certain amount of paperwork.

MULTIYEAR CONTRACTS

A third problem in measuring wage increases is the evaluation of new multiyear union contracts. A TIP will have its greatest effect on the wage settlement if the firm and union know when they are bargaining whether the contract's provisions are in compliance with the standard. For this reason, and to prevent firms and unions from postponing large wage increases to the later years of a contract in order to be in compliance during the first year, the entire contract would have to be evaluated in advance. Since most major union contracts include COLAs, evaluating wage increases in new multiyear contracts requires predicting future price inflation. (A TIP can have no direct effect on pay increases in existing multiyear union contracts. Therefore, they can be evaluated at year-end like the pay increases of nonunion workers.)

Because the number chosen will affect expectations and thus will affect the success of the TIP, there may could be a temptation to use an overly optimistic prediction of future price increases. If this occurred, union workers with COLAs would often be judged to be in compliance but then receive wage increases above the standard because the actual price increase exceeded the prediction used to evaluate the COLA. This would seem unfair to firms and workers who do not have COLAs and, if substantial, would set in motion catch up pressures on the part of nonunion workers that could increase inflation in subsequent years. To some extent, these considerations are counterbalanced by the fact that union workers would have to restrain their wage increases for a 2- or 3-year contract period in order to be in compliance with a TIP that may only last 1 year.

CHAPTER 2

Improving the Adaptability of the Economy

THE PAST DECADE witnessed a substantial expansion of Federal involvement in many sectors of the economy. During this period many economists devoted a good deal of attention to ascertaining the benefits and costs of that involvement. Much less attention was paid to the loss of flexibility that accompanied greater government influence over private economic decisionmaking. But as new government programs increased the number of objectives to be satisfied in the making of economic decisions, the net result was to restrict the Nation's ability to respond quickly to economic and technological change.

Limitations on flexibility are sometimes desirable. Federal requirements for the safe disposal of toxic wastes, for example, are undoubtedly a legitimate way to reduce the flexibility of chemical manufacturers and users. But programs that are excessively complex or overly stringent reduce flexibility unnecessarily. Efficiency suffers, productivity declines, and the economy becomes even less responsive to change.

As government involvement in the economy has grown, so have the overtly political aspects of economic decisions. Representative government is quite responsive to claims from individuals, groups, or regions that proposed policies will benefit them or do them harm. Since all interventions, no matter how small, have the effect of harming some and benefiting others, there has been growing pressure to "manage" these gains and losses to produce "fairness" rather than economic efficiency. Many of the recent arguments over deregulation, for example, have tended to focus less on the benefits of deregulated markets than on the income losses of the persons or industries that have been protected in the past by Federal economic regulation. Similarly, discussions of the problems of declining industries have concentrated on the immediate fate confronting the companies and workers in those industries rather than on the more diffuse benefits associated with greater national economic efficiency.

Compassion for the human problems that accompany rapid economic adjustment may often be a valid argument for policies which

slow the pace of adaptation. But excessive concern over who gets what can add rigidities to the economy and lead to the result that almost everyone gets less.

The shocks to the world economy that occurred in the 1970s—huge and abrupt increases in energy prices, unprecedented strains on the financial markets, major fluctuations in agriculture—would have tested even the most flexible and adaptable of economies. Since the adaptability of our economy was already less than ideal, these shocks hurt us more than they might have in other circumstances. Similar shocks are likely to occur in the next decade or two. The Nation therefore must prepare itself to deal with these shocks by increasing the adaptability of its economic institutions.

This will pay important dividends in the Nation's fight against inflation. As pointed out in Chapter 1, rigid economic institutions sharply limit the effectiveness of macroeconomic policies. They can turn what otherwise would be transitory pressures for higher prices into permanent price increases. Public and private barriers that prevent resources from flowing out of inefficient sectors to more efficient ones help create bottlenecks that impede efforts to promote economic growth.

The need, therefore, is for greater flexibility, not merely to permit individual sectors to respond more effectively to rapid economic change, but also to permit the economy as a whole to withstand such change without continual increases in the rate of inflation.

Because energy markets are such an important example of an area in need of added flexibility, this chapter first addresses energy problems. The second section addresses two major types of regulatory reform: eliminating obsolete regulatory structures and improving the functioning of necessary regulation. Both kinds of reform serve to eliminate unnecessary costs and reduce unjustified rigidities. The third section describes some of the far-reaching changes taking place in the financial markets and the strains these changes are creating. The fourth section describes the changed role of the agricultural sector and the corresponding need for more flexible instruments of agricultural policy. The fifth section addresses the problems of structural adjustment that are being created by changing demographic and industrial conditions, while a final section discusses the growing pressures on government to identify and aid promising industries and sectors.

ADAPTING TO ENERGY UNCERTAINTY

No sector of the economy better illustrates the increasing need for flexibility and adaptability than energy. The challenge is not only to

use less and produce more energy in the face of higher energy prices, but also to deal with the uncertainties of supply and price.

ADJUSTING TO HIGHER ENERGY PRICES

Available evidence suggests that the adjustment to higher energy prices is well underway. Between 1973 and the third quarter of 1980, real energy prices increased by 59 percent and the energy input per dollar of real gross national product (GNP) dropped by 19 percent. As energy prices rose, conservation of energy resources became increasingly attractive in economic terms. Shortages and uncertainty of supply also induced conservation, sometimes very rapidly.

While many uses of energy can be adapted relatively quickly to higher prices, others require more time. Consider the time required, for example, for the economy to feel the full effect of a 10 percent increase in the real price of gasoline. Studies suggest that the initial adjustment of consumers to such a higher price—perhaps by carpooling or taking shorter recreational trips—would reduce gasoline use by only 2 percent. But over a longer period, as consumers are able to buy more fuel-efficient vehicles, change residential locations, and the like, the fall in gasoline use may amount to perhaps 8 percent. Thus, a major portion of the savings in energy use compelled by the substantial 1979–80 increases in oil prices is still before us.

Rising prices also encourage suppliers to develop new energy sources. In the first 6 months of 1980, domestic oil producers drilled 19 percent more wells in the United States than they did during a comparable period in 1979 and opened 15 percent more oil and gas wells than they did in the entire year of 1973. For the first time in years, additions to proven natural gas reserves may have exceeded withdrawals. The development of nonconventional fuel sources—gasohol, solar energy, and so on—has also been occurring at a stepped-up pace.

ADJUSTING TO PRICE AND SUPPLY UNCERTAINTY

Perhaps the biggest challenge in energy today is to minimize the economy's vulnerability to disruptions in the supply of oil. Disruptions can vary both in size and duration. The ones experienced so far, though painful to the world's economies, have been relatively small. But much larger ones are conceivable. There is little doubt that a prolonged reduction in Middle Eastern oil supplies could severely damage the U.S. economy. A recent simulation study by the Congressional Budget Office (CBO) indicated that a yearlong cutoff of oil supplies from the Persian Gulf might reduce oil supplies available to the United States by about one-third, and output by nearly 10 percent—almost $3,000 per household. Although estimates of this sort are necessarily subject to a high degree of uncertainty, the con-

sequences of such an interruption on employment, wages, and prices clearly would be massive. Moreover, the threat of disruption, small or large, hangs like a cloud over the economy and thus affects consumer and investor expectations. It is therefore imperative that the Nation have policies to reduce its vulnerability to oil supply disruptions and to deal effectively with the consequences of any vulnerability that remains.

One simple and often-used measure of vulnerability is the level of the Nation's dependence on imported oil. In 1977 the United States imported a record average of 8.8 million barrels of crude oil and petroleum products per day. By late 1980, however, imports had fallen to about 6.5 million barrels per day. Although some of this drop was due to the recession and high inventory levels, a larger part of the decline can only be accounted for by conservation and additional domestic production.

Dependence on imported oil, however, is not equivalent to vulnerability. If imported oil came from many small geographically dispersed producers, each unlikely to cease production suddenly, even a high level of oil imports would mean little vulnerability to interruption. At the other extreme, even a zero level of oil imports would not totally protect the U.S. economy in the event of extreme instability in the world oil market. The United States could not stand by and watch the rest of the world's economies collapse without suffering irreparable economic harm itself, and would not do so, even if it were possible to isolate itself from such damage.

Thus, vulnerability is not easily measured. It is related in part to the ability of the Nation's capital stock to adjust rapidly enough to changes in the world price of oil, and in part to the fact that an oil supply interruption would result in large domestic and international transfers of wealth, large losses in output, losses of consumer and investor confidence, and a sharp surge in inflation.

The experience of past episodes of supply disruption has taught policymakers to appreciate the limited ability of governments to allocate scarce petroleum supplies and the long-run problems that result from attempts to shield consumers from the consequences of higher prices. These same episodes have also shown that such disruptions are accompanied by other impacts that private markets cannot be expected to take into account. For example, private economic decisionmakers—consumers and business firms—are unlikely or unable to factor the substantial macroeconomic effects of an oil supply disruption into their individual responses. Therefore, they will tend to take fewer preventive measures than is socially desirable. Moreover, the expectation of government intervention is also likely to affect private behavior. The experience of past disruptions may have created the

expectation of price controls or fuel allocation in the event of another disruption and thus further reduced the incentive for individual consumers or business firms to take steps to protect themselves.

Large disruptions would not only intensify these effects but pose the added risk that energy markets would be overwhelmed—at least for a while—by rapidly changing information, bottlenecks in distribution to industry, supply uncertainty, and the potentially destabilizing influence of hoarding. Thus, the proper mix of public and private responses to an oil supply disruption will depend upon a number of factors, including the magnitude and expected duration of the disruption and the steps taken in advance to reduce its impact.

Improving Adaptability

One way to reduce the economy's vulnerability to disruptions of foreign oil supplies would be to increase the short-run responsiveness of domestic production and consumption to short-term changes in price and supply. If domestic producers could easily expand supply and users could easily reduce demand, large transfers of income would not be generated by the price movements needed to balance supply and demand. Thus, the more elastic the demand and supply of energy are in the short run, the less vulnerable the economy will be to a disruption in foreign oil supplies.

Flexibility in fuel use is one way to increase short-run elasticity in demand. Today, for example, U.S. industrial facilities that burn over one million barrels of oil per day have the technical capability to substitute domestic natural gas on very short notice. The potential flexibility of the country's industrial users of energy is apparently several times this level, however. According to one source, it is possible to develop the capability to substitute coal and natural gas for an additional four million barrels per day—for a total in excess of one-fourth of present U.S. oil consumption.

Just what degree of fuel-switching capability is economically attractive is another matter. Building fuel-use adaptability into industrial facilities is costly; it requires additional capital investment and may increase operating expenses. Further, to utilize such flexibility, there must exist both sufficient supplies of other fuels and the ability to deliver them where needed.

The general dilemma is that the Nation's capital stock must be sharply modified in the face of higher energy prices, but it also must be enabled to function despite uncertainty of energy supply. As a result, the energy-using capital stock of the future will embody a compromise between greater productivity and fuel-use flexibility.

Actions can also be taken to increase the short-run elasticity of energy supply. Sizable fuel inventories, in particular, would provide a substantial degree of flexibility. At the outset of the Iran-Iraq war in

September 1980, world oil stocks were at record levels. U.S. domestic stocks, including oil not yet ashore, were some 300–400 million barrels above the minimum operating needs. In contrast, world reserves were quite low when the supply of Iranian oil was disrupted in late 1978. The shortfall associated with the 1980 interruption was comparable in size to the shortfall of 1978–79. Yet the earlier disruption resulted in a sudden and rapid escalation of world oil prices, while no such shock occurred after the 1980 disruption. The substantial size of world and domestic oil reserves played an important role in preventing panic and maintaining relative price stability.

Thus, private contingency stocks and public stocks such as the Strategic Petroleum Reserve can provide an important buffer to future disruptions. The strategic reserve is far less than adequate, however, and an increase in its size is essential to reducing our vulnerability to foreign supply disruptions. But care must be taken to assure that such a buildup, by its effect on the world oil market, not be destabilizing. Furthermore, the reserve program should not merely substitute a stockpile created at government expense for an increase in private precautionary inventories. This could be partially avoided by announcing a plan that would use the strategic reserve only in the event of a relatively large disruption and allow market forces to come into play during smaller ones.

To date, attention has focused on *oil* stockpiles. But the installation of additional industrial facilities with the flexibility to use more than one type of fuel would make stockpiles of other fuels equally useful in reducing upward pressure on world oil prices.

Flexibility in fuel use would not reduce our vulnerability, however, if constraints in the distribution network impeded the use of available alternative fuels. Propane, for example, is a frequently used alternative to natural gas, but distribution problems limited its use during natural gas curtailments in 1976 and 1977. One solution would be to maintain supplemental distribution capacity: additional handling or line-haul facilities in the case of coal, additional pipeline or surge pumping capacity in the case of natural gas, and additional wheeling and coal generating capacity in the case of electricity. Certain of these strategies, particularly the wheeling of electricity, have been utilized in the past to reduce the effects of temporary fuel curtailments.

Dealing with a Disruption

Increasing private and public stocks of the different types of fuels and improving fuel-use flexibility cannot completely eliminate the Nation's vulnerability to a major interruption in oil supply. Both international obligations and the high cost of any actions to reduce our

dependence on foreign oil mean that some degree of U.S. vulnerability to oil supply disruptions will persist for a long time to come.

Even as a theoretical question, it is hard to know the level of oil reserves that would be needed to totally insulate the United States from a supply disruption. Present plans call for a Strategic Petroleum Reserve of approximately one billion barrels, which is the equivalent of about 150 days of imports at current import levels. But the reserve is only intended to reduce our vulnerability, not to eliminate it. Let us suppose that a publicly owned stockpile of oil equivalent to a year's imports (about two billion barrels) would provide close to absolute protection from a disruption of Middle Eastern supplies. And suppose further that the acquisition of such a stockpile would not raise the world price of oil, although there can be no doubt that it would. Such a stockpile would then cost approximately $70 billion to acquire at the current price of about $35 per barrel. It would also require the expenditure of about $9 billion per year in storage and carrying costs. This is expensive insurance. Moreover, it would take several years of uninterrupted accumulation to acquire such a stockpile.

Since it is impractical to eliminate our vulnerability, it is essential to develop policies and programs that would assure fair and efficient distribution of fuel supplies during a period of substantial disruption and minimize the negative impact of such a disruption on the economy.

The Nation's current emergency plan, the authority for which expires on September 30, 1981, has two steps: a program of oil product allocation during the early stages of a major disruption, supplemented by a program of gasoline rationing if the disruption is large enough and continues long enough. The operation of this plan requires either standby price control authority or the ability to grant and implement this authority on extremely short notice.

The current plan is designed to reduce the large transfers of income from domestic energy users to domestic energy producers that would otherwise occur during a major disruption. The plan is thus especially responsive to the goal of equity. By reducing transfers of income the plan is also intended to meet the macroeconomic goals of reducing the economic drag caused by increases in oil prices and preventing temporary energy price surges from becoming permanent through formal and informal wage and price indexing.

But the plan has many deficiencies, only some of which are administrative. Although the allocation part of the program would use an existing bureaucratic structure—albeit one scheduled to expire in September 1981—the rationing part of the plan would require the creation of an untested bureaucracy that would use the postal system

to distribute rationing coupons and the banking system to account for them.

An even more important drawback is the plan's adverse impact on efficiency. Its allocation and price control aspects may already have had the effect of discouraging private parties from taking self-protective measures, since they would deny those who invest in emergency fuel stocks or fuel flexibility the benefits of that investment. The plan's intended reliance on historic patterns of fuel use in making allocations would reduce flexibility by preventing users from switching to more abundant fuels because they had not previously used those fuels in substantial quantities.

Finally, the plan emphasizes a reduction in gasoline use in the event of a disruption. Gasoline alone, however, could not absorb the brunt of a major emergency. If a complete cutoff of oil supplies from the Persian Gulf were handled by reducing the amount of oil refined into gasoline, the availability of gasoline in the United States would be reduced by over 75 percent.

Thus, the present strategy for dealing with a major disruption is a three-way compromise between the administrative problems of implementing an emergency plan, the allocation deficiencies of such a plan, and the need to deal effectively with the severe macroeconomic consequences of a major disruption.

One alternative plan would be to let uncontrolled market prices apportion available supplies. Such a plan would eliminate the problems of bureaucratic administration, but it would expose the economy to the consequences which might result from the building of fuel inventories at peak prices when the Nation's interests would be served by drawing inventories down. Such hoarding, as well as other complications, might occur because the problems of rapidly communicating market information during uncertain supply conditions would make it difficult for the market to cope with a large disruption.

Furthermore, public declarations that the market would be permitted to operate without constraint during a large disruption would be likely to lack credibility, since the market has not been permitted to act freely during previous relatively small disruptions. Private parties are likely to assume that the government will also intervene during a major disruption, and they may modify their own actions accordingly. For example, given their political visibility and small numbers, the Nation's oil producers and distributors might pass up the opportunity to maximize short-run profit and engage instead in their own form of product allocation. Thus, the choice might not be between a market solution and government allocation, but between public and private allocation plans.

While the market solution might promise the greatest degree of allocative efficiency, it would not respond to the problems associated with the transfer of tens of billions of dollars from domestic consumers to overseas producers. More importantly, a "business as usual" strategy would fail to address any of the macroeconomic consequences associated with the large and sudden transfers of income among sectors of the domestic economy—possibly amounting to hundreds of billions of dollars—that would occur when business was quite decidedly not "as usual."

Another proposal—one that attempts to deal with the macroeconomic effects—would allow the market to allocate oil supplies during a major disruption but tax the resulting windfalls reaped by domestic suppliers and rebate these new tax revenues in a way that would address the income distribution and macroeconomic problems accompanying the disruption. Although attractive in theory, such a plan would present many practical difficulties. For one thing, as already noted, the magnitude of the fiscal drag that would occur from allowing the free play of the market to determine prices might be immense, and the amount of administrative effort that would be required to capture the windfall profits on such huge sums and recycle them efficiently would be substantial. This administrative burden might even rival that of the present rationing plan.

Neither the present plan nor the tax rebate alternative would limit the large international transfers of wealth that would accompany a severe oil-supply disruption. Some economists have recommended the imposition of an import fee during a disruption to capture these windfalls. The ability of such a plan to achieve this goal is uncertain, however, since its success would depend a great deal both on precise timing and on the response of the oil-supplying nations: major overseas suppliers, having political as well as economic goals, might simply respond to such a fee by raising their prices and reducing quantities in an attempt to maintain a constant net revenue. While the success of an import tax or fee is not certain, it nonetheless merits further exploration because it is presently the only proposed method of responding directly to a transfer of income from domestic consumers to foreign producers.

Toward a Policy to Deal with Vulnerability

Developing an appropriate set of policies to deal with vulnerability to energy price and supply shocks is an immense challenge. The dilemma facing the policymaker is when to rely on private market responses and when to take the risks that accompany government-operated price control, allocation, and taxation schemes. The answer would appear to have three parts. First, use the superior allocative abilities of private markets whenever possible. The markets appear

capable of handling small- and medium-sized disruptions, such as those experienced to date. Second, take technological and stockpiling initiatives to increase short-run flexibility in energy use and supply. This will increase the size of disruptions where a market response remains appropriate. To achieve such increased energy-use flexibility, it would be beneficial to develop strategic stockpiles of fuels in addition to oil. The use of these fuels during emergencies would require investments in supplementary distribution capacity. Finally, since measures to reduce vulnerability will take time to put into place, and since the Nation will never be totally invulnerable, contingency plans must be developed to deal with disruptions so large that they might overwhelm the private market.

For both political and economic reasons, a program of allocation by price alone is unlikely to be adequate during a very large disruption. Too many problems would flow from any policy that placed a short-term "tax" amounting to as much as several thousand dollars per year on each U.S. household. Although any nonmarket mechanism would be administratively cumbersome and lack the allocative efficiencies of a pure market response, proper design could materially reduce these administrative and allocative problems. The present rationing scheme has much more precisely targeted distributional goals than most of the proposed programs of general tax rebates. Thus, differences in the value placed on achieving equity explain much of the difference in administrative complexity. A rationing plan that gave primary weight to minimizing the macroeconomic consequences of a disruption, however, would have far fewer administrative complexities. Such a plan might forgo the establishment of the hundreds of local boards that would otherwise be needed to adjudicate individual inequities.

Responding to the challenge of energy vulnerability will not be made easier by ignoring the limits and complexities of alternative policies. Thus, while the benefits of a large and well-managed Strategic Petroleum Reserve are very substantial, it is also true that a preoccupation with the reserve's potential may divert attention from the fact that the acquisition of reserves takes time, and that even substantial reserves will not eliminate vulnerability. Similarly, the allocative efficiency of the market would be superior to any government-run price control and allocation scheme, yet the market alone would not be able to cope with all of the problems associated with a major interruption. There is no doubt that the present contingency plan for gasoline rationing has major shortcomings, but it is also true that new and untested schemes for taxing and rebating windfall profits could mirror in their complexity the rationing they seek to avoid.

High energy prices and excessive dependence on imported oil supplies are two major dimensions of the energy problem. However, the uncertain timing of increases in energy prices and the uncertainty of supply are two other dimensions which must command the attention of policymakers. Higher prices alone—if known in advance with a fair degree of certainty—would pose a costly but otherwise straightforward problem of economic adjustment. Supply uncertainty, however, adds a potentially dangerous complication. The Nation's capital stock must be made more energy efficient, and the Nation must change its energy-using habits, but both of these changes must be accomplished in ways that assure the flexibility to respond to sporadic episodes of price escalation and shortage. The challenge to policymakers is to adopt energy policies which effectively respond to legitimate concerns about equity and macroeconomic problems but neither penalize private efforts to respond to energy uncertainty nor unduly rigidify economic decisionmaking.

IMPROVING REGULATORY PRACTICES

Over the past decade there has been a growing awareness that Federal regulatory activities exert substantial influence on the economy. In trying to measure this influence, some have focused on the amount of capital required to comply with Federal regulations, some have focused on the rate and direction of technological change, and still others have focused on the regulatory burden facing small business. None of these measures fully captures one of regulation's most important consequences—its tendency to reduce the ability of the economy to adjust efficiently and swiftly to change.

Regulation's tendency to produce rigidity has sometimes been directly observable. In the past, for example, the Interstate Commerce Commission severely restricted common carrier trucking firms trying to choose the most efficient routes for their trucks. The fuel-adjustment charges still permitted by State regulatory agencies have reduced the interest of electric utilities in making fuel-saving investments, while the Federal regulations that rigidly segmented both the telecommunications and financial industries helped thwart innovations that would have improved productivity.

In other situations, however, the way in which regulation reduces flexibility is less obvious but nonetheless real. Some legislation, for example, prevents regulators from considering—much less balancing—competing national goals in establishing regulatory priorities. There are Federal statutes that prescribe the specific dates at which compliance with regulations must be achieved, and some statutes even specify compliance methods. Furthermore, the compartmentaliz-

ing of regulatory functions often prevents the different agencies responsible for regulating different aspects of a given industry's performance from developing mutually consistent regulatory strategies. Once regulations are issued, they are seldom given a fresh look to see if they should be altered in the light of new knowledge or new conditions. Each of these facets of regulation has made our economic system less flexible. During the coming decade, however, the need to increase the economy's adaptability and flexibility will grow. Regulatory reform must play an important role in meeting this need.

THE ROLE OF "DEREGULATION"

In several industries—railroads, trucking, airlines, energy, telecommunications, banking—where the existing regulatory structures have largely outlived their usefulness, this Administration has achieved significant reform. Regulatory bodies like the Interstate Commerce Commission (ICC), the Civil Aeronautics Board (CAB), and the Federal Communications Commission (FCC), have acted administratively to reduce the burden of regulation where their statutes allowed them to do so, and new legislation has carried the process even further. Since the passage of the Airline Deregulation Act of 1978, Congress has also substantially deregulated common carrier trucking, interstate movers of household goods, railroads, and financial institutions. Meanwhile, the phased decontrol of natural gas and domestic crude oil prices continued to provide a powerful spur to energy conservation and to the exploration and development of new domestic sources of oil and natural gas. By the last quarter of 1980 an estimated 62 percent of all domestically produced crude oil was free of controls.

Transitions to Deregulation

As regulatory structures have been dismantled, the importance of properly designing the regulatory transition—the period during which an industry moves toward deregulation—has become more evident. Changing the "rules of the game" can cause serious dislocations in a previously regulated industry, and these dislocations must be taken into account. Users of the industry's services have made investments on the basis of the prices regulation has produced. Even if these price signals were in some sense "wrong," these investments cannot easily be undone. Similarly, workers and stockholders in the industry adapted their behavior to the realities of a regulated environment long ago, and changes in the industry's regulatory structure will affect their earnings.

Legislative debates have been dominated by the desire to cushion those with a stake in the existing system—customers, workers, and shareholders alike—from the shock of deregulation. For the most

part, the interests of these parties have been protected. Requirements for substitute service, provisions for notice of intention to suspend service, and provisions to protect the economic position of workers have generally been written into deregulation legislation. Unfortunately, much less care has been taken to make the course of deregulation sufficiently flexible to withstand the shock of sharp changes in the external environment.

The best example of this is the deregulation strategy chosen for natural gas. The decontrol schedule adopted in the Natural Gas Policy Act of 1978 will allow the price of "new" natural gas to gradually move up to the equivalent of $15 for a barrel of oil (in 1978 dollars) by 1985, a level thought at the time to be more than adequate to permit a smooth transition to uncontrolled prices. By the end of 1980, however, the world price of oil (in 1978 dollars) had already reached $28.50 per barrel. By 1985, oil prices will probably be more than double the level anticipated when the natural gas decontrol legislation was enacted. Thus, there will still be a large gap between the controlled price of "new" gas and the price of "decontrolled" gas.

There will then be an obvious temptation to delay complete decontrol in the hope of minimizing the shock that would occur if this price gap was closed in one step. But delay would be unwise. A better solution would be to reconsider the decontrol schedule soon for the purpose of making the necessary alterations in the decontrol path. The previous strategy of preventing windfall profits by ensuring a slow transition to decontrol will probably have to be abandoned in favor of a strategy which deals directly with the windfall issue.

The sharp increase in world energy prices has also placed strains on the transition toward deregulation in other industries, particularly airlines and railroads. The increase in energy prices has created the inaccurate perception that the principal promise of deregulation of the airlines—lower fares—was illusory. As discussed in last year's *Report,* however, only the productivity improvements permitted by deregulation prevented the sharp rise in energy prices from resulting in even larger increases in unit costs and thus in still higher air fares.

Higher energy prices have also made service to smaller communities by large aircraft an even less attractive financial proposition than it was earlier. However, the increased flexibility permitted by deregulation has helped to preserve air service to smaller communities by making it easier to substitute commuter carriers. Had this flexibility been unavailable, the short-run consequences would have been an enormous increase in Federal subsidies to the airlines, followed by the termination of service to many smaller communities.

With the increased fare and route flexibility permitted by deregulation, the airline industry has been weathering the most recent reces-

sion relatively well. Although substantial losses are being experienced by many carriers, most analysts consider the general condition of the industry to be sound. Most importantly, substantial investment in more fuel-efficient aircraft is continuing.

Rising energy prices have caused a different problem for railroad deregulation. Federal legislation enacted in 1976 provided the railroads with increased rate flexibility, but this initial dose of "deregulation" proved inadequate. In the meantime, the booming demand for coal prompted the railroads to raise coal-hauling rates sharply. These higher rates reflect the need to generate sufficient revenues to finance large investments in additional coal-hauling capacity, but they may also reflect some exercise of monopoly power. In any case, the rapid increase in coal-hauling rates, and the fear of even more rapid increases if the ICC controls were lifted, caused opponents of further deregulation to press for continuing ICC surveillance of coal-hauling and other bulk commodity rates. A compromise was reached that permitted a relaxation of the ICC's rate-approval authority on a prearranged schedule. The railroads have been given significant freedom to alter rates to meet shifting market conditions, while rail users have been given some protection against abuse of this freedom. The result should be better service and the substitution of coal for oil where lower total coal costs (including the cost of transportation) warrant.

Unexpectedly sharp increases in energy prices are not the only factor that has complicated regulatory transitions. Any unforeseen alteration in economic conditions can produce tensions. For example, the unprecedented swings in interest rates that occurred in 1980 placed additional strains on the already complex deregulation process of eliminating statutory differences between the various types of financial institutions.

This discussion leads to one conclusion. Inflexible transition paths are likely to encounter problems, particularly if the period preceding deregulation is stretched out to protect the economic positions of workers, shareholders, or consumers. Flexible transition paths, on the other hand, can allow industries to weather even large unanticipated shocks by permitting innovation. Transition paths should therefore be made as flexible as possible. Although the political difficulties of doing so should not be underestimated, it seems preferable to dismantle the regulatory barriers to efficient pricing relatively quickly and to take separate action to provide compensation for capital losses or to prevent windfall gains, if necessary.

EFFORTS TO IMPROVE THE PROCESS OF SOCIAL REGULATION

While much of the economic regulation placed on the statute books over the years has been eliminated or substantially reduced,

Federal regulations designed to protect the natural environment and the health and safety of both workers and consumers are necessary, and will remain so. The unaided market has not produced socially acceptable levels of pollution or worker exposure to hazardous conditions, and there is little evidence that it will.

But Federal regulation designed to protect the environment and the health and safety of both workers and consumers has not always produced the hoped-for results. The challenge to those who would reform these regulations is to design regulatory systems which intrude only to the extent required to achieve their goals and which use enforcement techniques that are appropriate, flexible, and efficient. Means must also be found to assure that the regulatory goals themselves reflect a proper balancing of national priorities. This may require new oversight methods or new regulatory tools.

Oversight Activities and Institutions

This Administration has utilized a number of methods to supervise the regulatory process. By Executive order, any executive agency proposing a major new regulation must develop an analysis of the expected economic consequences of its preferred alternative and of other possible approaches. Although this requirement only applies to a relatively small number of the regulations issued by the Federal Government each year, it has helped to upgrade the entire structure of regulatory decisionmaking. Many agencies now estimate the costs and benefits of all proposed regulations, even though these estimates are not always made public.

The regulatory analyses prepared by the agencies are subjected to independent review and comment by two institutions: the Regulatory Analysis Review Group (RARG) and the Council on Wage and Price Stability (CWPS). The RARG, an interagency body chaired by the Council of Economic Advisers, is composed principally of representatives from the executive branch agencies with regulatory responsibilities. It reviews approximately 10 regulations per year, concentrating on those that may impose especially large costs or that promise to be precedent setting. CWPS reviews approximately 50 regulations per year and is the only Executive Office unit having explicit statutory authority to review and comment on the proposed regulations of the independent regulatory agencies. This ability to provide credible estimates of the costs and benefits of proposed regulations, to suggest alternatives that might not ordinarily be suggested during the course of a rulemaking, and to serve as a source of quality control over agency analytical activities has proved crucial to effective regulatory oversight.

Whenever a RARG report has been filed, and in a small number of additional executive branch rulemakings, the Council of Economic

Advisers and other Presidential advisers have discussed the regulation with the agency prior to its issuance but after the period for public comment has ended. The purpose has been to assure the President that the agency head, in making the final decision, has considered the full range of alternatives allowed by statute and has taken cost-effectiveness criteria into account.

The task of following the development of important regulations has been made far easier by another innovation, the *Regulatory Calendar*. This list of important forthcoming regulations has become indispensable to understanding the cumulative impact of regulation on the economy. The Regulatory Council, which publishes the *Calendar,* has increased the amount of crosscutting analysis in it and is also developing industry-specific calendars. The first of these will catalog all Federal activities intended to affect the manufacture, sale, or use of automobiles. Through the use of the *Calendar,* the Council also seeks to identify overlapping regulations and tries to improve coordination between agencies where overlap is inevitable.

In addition to these regulatory oversight activities, there have been special reviews of all of the significant regulations affecting a few major industries. The most widely publicized of these were studies of the steel and auto industries conducted, respectively, by the Environmental Subcommittee of the Steel Tripartite Committee and by an interagency committee under the leadership of the Secretary of Transportation. Another is the review of important regulations affecting the nonferrous metals industry, announced by the Regulatory Council in October. Special reviews of this kind are likely to become more common in the years ahead.

Further Improvements in Regulatory Oversight Activities

The oversight practices described above have been central to this Administration's effort to develop new techniques in an area where the proper relationship between centralized oversight and agency decisionmaking is unclear and where analytical techniques require further improvement. Both the relationship and the analytical tools will be refined in the future.

Formal consideration of the anticipated costs of any regulation is an obvious necessity. Our national resources are not infinite. There must be some determination of whether the anticipated costs are within our means and our willingness to pay. Moreover, it is clearly desirable to maximize the benefits of any given level of regulation.

Although the preceding statements may seem elementary, consideration of the anticipated costs of a regulation is sometimes prohibited by statute. The Clean Air Act, for example, has recently been interpreted in court as prohibiting the Environmental Protection

Agency (EPA) from considering prospective costs in setting ambient air quality standards.

Even when consideration of costs is permitted or required by statute, agencies and courts must still decide whether this has been done in an appropriate manner. Agency procedures and court opinions on this subject vary. There is no universal test of economic feasibility and no agreed-upon "best" relationship between the economic costs of a proposed regulation and its expected benefits.

For these reasons, any sustained effort to ensure formal consideration of costs in regulatory decisions must involve the Congress, the courts, the White House, and the agencies charged with implementing regulatory statutes. Without such broad involvement, the matter will only be resolved on a case-by-case basis over many years. That slow process would provide no guarantee of uniformity, but it might well produce a regulatory paralysis arising from delay and uncertainty.

One suggested device for reconciling regulatory priorities within and between programs is the "regulatory budget." Most of its proponents envision this device as analogous to the Federal fiscal budget, with specific amounts of "permissible regulatory expenditures" assigned to each program and each agency. Some even envision a process of formal congressional authorization.

Although economists have made considerable progress in estimating the direct costs of complying with regulation, it is not likely that the techniques for a full-scale regulatory budget will exist soon. But it is feasible—and necessary—to incorporate budgetary principles, especially the establishment of priorities, into regulatory programs. This has been the aim of the Administration's regulatory oversight activities.

EFFORTS AT "SMARTER" REGULATION

With the direct encouragement of the President and the Regulatory Council, regulatory agencies have been experimenting with different ways to reduce the cost burden of regulation.

A good example is EPA's "bubble concept." This concept is based on the fact that it is often possible to reduce emissions of a given pollutant from one source far less expensively than from another source. Thus, instead of compelling each source to meet a standard, EPA figuratively places a "bubble" over an area (a large industrial plant, or, in some cases, an even larger geographic area) and lets private decisionmakers decide how to meet the standard for the area at the lowest cost. EPA initially intended to apply the concept quite narrowly, but during 1980 it gradually found ways to broaden its application. Means were found to eliminate many time-consuming procedures. The ability to develop acceptable "bubbles" for sulfur oxides

and particulates was demonstrated. Finally, and perhaps most importantly, a solution to a problem once thought to be insurmountable—namely, how to permit the concept to be applied in areas of the country not already meeting ambient air quality standards—appeared to be in sight. As the year came to an end, numerous "bubbles" were in the final stages of design and approval.

In some situations where the bubble concept is applied the cost savings will approach 60 percent. Furthermore, the concept so increases engineering flexibility that it offers the prospect of sharply reduced emissions in some cases.

Experimentation with a second regulatory innovation—the use of marketable permits—is just beginning. EPA recently suggested an overall limit on fluorocarbon production (and, hence, fluorocarbon emissions), combined with the creation of a market for buying and selling emission rights. While this approach promises substantial savings in the cost of reducing emissions, it transfers income from fluorocarbon users and producers to the government. If ways can be found to deal with the income transfer issues, and certain other technical difficulties overcome, the use of such a strategy would permit the continued use of fluorocarbons in those products that consumers value most while eliminating the need for administrative agency determinations of "essential" and "nonessential" uses. It will also stimulate the development of products that make more efficient use of these chemicals.

A third kind of effort at "smarter" regulation is the attempt to tailor regulations to the organization being regulated. The burden of compliance (especially the paperwork burden) often falls disproportionately on small businesses, some local governments, and certain nonprofit organizations. While a blanket exemption of small entities from regulation would not be feasible, it is often possible to reduce their regulatory burden. This approach was incorporated into statute by the Regulatory Flexibility Act of 1980, which requires the Federal Government to estimate the costs of new regulations for small organizations and to review its existing regulations to see whether the burden could be reduced.

Another way of improving the regulatory process is to examine existing regulations in a systematic way and eliminate those that are outmoded or unnecessary. On the basis of such a review, the Occupational Safety and Health Administration (OSHA) has eliminated nearly one thousand regulations during the past 4 years. And in September the Department of Housing and Urban Development (HUD) proposed to eliminate significant portions of its Minimum Property Standards, a large body of regulations going back almost 40 years. These regulations had been originally designed to ensure, among

other things, that federally assisted housing is safe and sanitary, and that federally guaranteed mortgages are marketable. HUD's review of the entire set of regulations was prompted by its belief that the private market now adequately performs some of these functions.

Still other alternatives to "command-and-control" regulation are possible. In choosing among alternatives, policymakers should seek the least intrusive ways of achieving regulatory goals. As a matter of course, regulators should look for techniques closely matched to the marketplace failure which was the original justification for regulatory intervention. Resort to a command-and-control solution should be the last step considered, not the first or second.

FINANCIAL MARKETS ADAPTING TO CHANGE

The financial markets have proved remarkably adaptable to changing economic conditions over the past two decades. In general, the markets' adaptations have occurred despite a slow response on the part of legislators and regulatory agencies.

In the mid-1960s there were many restrictions on depository institutions, including the following:

- limitation of the right to offer checking accounts to commercial banks;
- prohibition of interest payments on checking account balances;
- interest rate ceilings on savings accounts and other deposits in commercial banks and thrift institutions, with thrifts permitted to pay a differential of as much as three-fourths of 1 percent more on accounts of similar maturity;
- ceilings on the maximum interest rate that could be charged for loans;
- limitations on the types of assets that could be held; and
- geographic limitations on the establishment of branch offices and on the acquisition of other institutions.

These restrictions—motivated by such concerns as maintaining a sound financial system and a sufficient flow of funds for home mortgages—helped sustain the compartmentalization of depository institutions, both by function and by geographic area. Commercial banks provided "full service" banking to households and businesses, while thrift institutions were the principal repository for household savings and the dominant source of funds for residential mortgages.

This rigidly segmented system worked tolerably well from the 1940s through the mid-1960s. Market interest rates generally did not rise much above the regulatory ceilings on interest rates on deposits,

and most depository institutions were able to maintain a general degree of customer loyalty while still competing for deposit and loan business.

ADAPTING TO RISING INTEREST RATES

Since the mid-1960s, however, sharp swings in market interest rates and a general upward ratcheting of the interest rate cycle due to inflation have induced sweeping changes in the financial markets. Ceilings on deposit interest rates lagged behind rising market interest rates, creating gaps between the yields from deposits with regulated interest rates and the yields available on instruments with unregulated interest rates. Depository institutions then found it difficult to attract enough funds in regulated deposit markets to sustain their dominance in the lending markets. Moreover, member banks of the Federal Reserve System were further disadvantaged because they had to maintain a portion of their deposits as reserves in noninterest bearing balances, and the burden of these reserve requirements grew as interest rates rose.

Throughout the late 1960s and the 1970s, banks and thrifts sought to hold their competitive position by finding ways to attract funds less restricted by government regulations. For example, they developed a mechanism to sell U.S. Government securities to large corporate customers, agreeing to repurchase them later. Because this instrument (called a "repurchase agreement") was not subject to interest rate ceilings—and, for member banks, bore no reserve requirement—an institution could offer its corporate customers a competitive rate on short-term balances. By 1980, repurchase agreements outstanding at commercial banks had grown in value to roughly $30 billion. In the early 1970s some State-chartered thrift institutions in Massachusetts and New Hampshire found that they could legally offer Negotiable Order of Withdrawal (NOW) accounts, which are similar to demand deposit (checking) accounts. With NOWs, which also can earn interest, the thrifts began to compete with commercial banks for transactions balances. Meanwhile, many commercial banks gave up their membership in the Federal Reserve in order to avoid the burden of its reserve requirements.

Despite these actions, banks and thrifts still were unable to provide a fully competitive range of financial services. Nondepository institutions, less burdened by regulation, found the banking market profitable as they began issuing deposit-like instruments and offering bank-like services. Money-market mutual funds, for example, were able to offer small savers substantial liquidity while offering a yield competitive with market interest rates. Many of these funds allow "deposits" (uninsured equity interests, called shares) to be maintained in almost any amount, and most of them offer limited check-

ing services. Money-market mutual funds did not exist until 1971, but by August 1980 they had grown in value to over $80 billion.

Corporate borrowers found it cheaper to bypass their traditional lending relationships with commercial banks and increased their reliance on nonbank sources of funds like the commercial paper market, where corporations sell direct short-term liabilities. The issuance of commercial paper by nonfinancial firms grew from 4 percent of the total short-term debt of business firms in 1972 to 7 percent in 1979. Meanwhile, foreign banks, which were not burdened by Federal Reserve requirements and which had well-developed foreign sources of funds, also began moving into U.S. markets, especially business lending. By capitalizing on the expansion of international trade and by pricing their loans aggressively, they increased their share of U.S. business loans from 4 percent in 1972 to 9 percent in 1979.

U.S. banks have tried to keep their share of business loans by reducing their interest rates on loans to corporations with access to such alternative sources of funds. While the so-called prime rate is still the lowest rate offered to good customers lacking these alternatives, loans made at rates less than the prime rate are now commonplace. Nevertheless, the share of total short-term business debt held by domestic commercial banks shrank from 86 percent in 1972 to 60 percent in 1979.

Even as they sought innovative ways to bypass the regulatory structure and to maintain their markets, some depository institutions urged regulatory agencies to loosen their restrictions. The call for deregulation was less than unanimous, however, since many institutions believed that the regulatory structure still protected their profitable markets from encroachment by competitors. Nevertheless, experiments in deregulation were conducted by both Federal and State financial regulators in the 1970s (Table 11). In the early 1970s, for example, interest rate ceilings on large time deposits ($100,000 or more) were removed, in part to permit banks to meet the strong demand for bank credit that developed when the failure of the Penn Central temporarily destabilized the commercial paper market. This action provided banks and thrift institutions with new access to the open market, and by the end of 1980 they held more than $250 billion in such deposits. More recent regulatory changes have allowed banks and thrifts to compete for the funds of smaller savers by issuing 6-month money-market certificates (MMCs) and 2½-year small saver certificates (SSCs). These instruments, whose interest rate ceilings are adjusted frequently to keep pace with market interest rates, had attracted roughly $475 billion to banks and thrift institutions by the end of 1980.

TABLE 11.—*Selected financial regulatory changes, 1970–80*

Date	Change
June 1970	Regulation Q ceilings on time deposits of $100,000 or more with maturities of 30–89 days suspended.
September 1970	Federally chartered savings and loan associations permitted to make preauthorized nonnegotiable transfers from savings accounts for household-related expenditures.
June 1972	State-chartered mutual savings banks in Massachusetts began offering NOW accounts.
May 1973	Regulation Q ceilings on time deposits of $100,000 or more with maturities exceeding 90 days suspended.
January 1974	All depository institutions in Massachusetts and New Hampshire authorized by Congress to offer NOW accounts.
August 1974	Selected Federal credit unions permitted to issue credit union share drafts, check-like instruments payable through a commercial bank.
November 1974	Commercial banks permitted to offer savings accounts to State and local government units.
April 1975	Member banks authorized by the Federal Reserve to make transfers from a customer's savings account to a demand deposit account upon telephone order from the customer.
November 1975	Commercial banks authorized to offer savings accounts to businesses.
February 1976	Congress extended NOW accounts to all New England states.
May 1976	New York permitted checking accounts at State-chartered mutual savings banks and savings and loans.
June 1978	Six-month money market certificates (MMCs) introduced at banks and thrifts.
October 1978	Congress extended NOW account authority to New York State.
November 1978	Commercial banks and mutual savings banks authorized to offer automatic transfer (ATS) from a savings account to a checking account or other type of transactions account.
July 1979	A floating ceiling for time deposits at banks and thrifts with a maturity of 4 years or more established.
January 1980	The floating ceiling extended to time deposits with a maturity of 2½ years or more.
March 1980	The Depository Institutions Deregulation and Monetary Control Act of 1980 enacted.

ADAPTING TO GREATER RATE VARIABILITY

While the depository institutions were adapting to greater competition and the high interest rate environment, they also faced the problem of growing interest rate risk. Increased rate variability and the upward ratcheting of interest rates have been especially troublesome to these institutions because their liabilities have traditionally matured more quickly than their assets. Moreover, while the new types of variable-rate instruments have allowed them to keep many of their depositors, these instruments have facilitated a shift of funds from stable, low-interest savings accounts to more variable and higher interest liabilities. Consequently, as market interest rates rise, so do the rates they must pay on their liabilities. When this happens, banks and thrifts lose income because the yield on their longer-term assets does not rise commensurately.

Depository institutions have responded to this problem by shortening the maturities of their loans and by offering loans whose interest rates are frequently adjusted over the course of the loan to prevailing market rates. In 1980, for example, almost 70 percent of term business loans extended by commercial banks had floating interest rates. Similarly, banks and thrift institutions have introduced new mortgage instruments—including the variable-rate mortgage and the rollover-rate mortgage—whose rates are adjusted every year or so—in stark contrast to the traditional 30-year, fixed-rate mortgage. The thrift institutions also sought to remove the legislative restrictions on their

holdings of consumer and business loans, which have shorter maturities than mortgages.

PRESSURES FOR COMPREHENSIVE LEGISLATION

In the late 1970s there was a growing realization throughout the financial community that despite piecemeal modernization, regulations affecting depository institutions needed more sweeping reform. The regulatory structure no longer was satisfying its original objectives. Instead, it was creating inefficiencies and inequities. It even diminished the effectiveness of monetary policy as banks left the Federal Reserve System. Pressures from various sources finally resulted in a compromise bank reform bill, the Depository Institutions Deregulation and Monetary Control Act of 1980.

Under this law, interest rate ceilings on time savings deposits will be phased out over 6 years. Moreover, beginning December 31, 1980, all depository institutions were allowed to issue NOW accounts to individuals and nonprofit organizations. In addition, uniform reserve requirements will apply to all depository institutions by the end of an 8-year transition period. As a result, the burden of reserve requirements will be spread more equitably among all institutions, and the Federal Reserve's control over the deposit base will be improved. The law also expands the asset flexibility of savings and loan associations, which will now be allowed to place up to 20 percent of their assets in consumer loans, while mutual savings banks will be allowed to invest up to 5 percent of their assets in business loans. Finally, the act repealed State usury ceilings on mortgage interest rates and relaxed State usury ceilings on consumer and business loan interest rates. These ceilings had seriously depressed such lending in certain States at various times during the past decade.

THE FINANCIAL STRUCTURE OF THE 1980s: BENEFITS, RISKS, AND PUBLIC POLICY

Today's financial environment is very different from the placid conditions of two decades ago, and it is likely never to revert to that earlier state. Changes in the financial markets have had significant impacts on the behavior of depositors, borrowers, and depository institutions who—along with the financial regulatory agencies—will face further challenges in coming years.

Depositors

Higher and more volatile interest rates have increased depositor awareness of the importance of actively managing their financial assets. Moreover, the proliferation of savings alternatives has provided depositors with access to new markets where they can receive a higher average return on their savings than previously. Even if inter-

est rates return to lower levels, it is likely that the market for deposits will remain more competitive and that savers will continue to be more interest-sensitive. This should work to encourage greater saving at a time when an increase in the Nation's rate of saving and investment would be welcome.

While savers as a whole benefit from these reforms, however, not all individual savers will achieve a higher overall rate of return. In many cases the depository institutions have offset part of the increase in interest which they must pay for deposit funds by raising the prices of their checking and other financial services. Depositors who maintain high balances but use relatively few services will benefit considerably, while depositors who maintain relatively low balances and who benefited in earlier years from free or low-cost services may find these new practices to their disadvantage.

Borrowers

Many of the innovations adopted by depository institutions to make loan rates vary in accordance with changes in market rates have shifted the risk of interest rate variation to borrowers. As finance costs have risen and become more variable, financial management has assumed more prominence as a corporate management function. In the past decade, corporations have significantly improved their cash management and have increased their use of alternative sources of funding, such as commercial paper. Meanwhile, corporations have relied much more heavily on short-term debt to finance their activities and have shortened the maturities of their bond issues. Some observers have expressed concern that this tendency toward shorter maturities of liabilities could lead corporations to reduce their commitments to long-lived capital investments in plant and equipment, which would limit the Nation's ability to improve productivity. It should be recognized, however, that corporations are at least partially protected against inflation-induced changes in interest costs if borrowed funds are invested in real capital. That is, if changes in the expected rate of inflation account for fluctuations in interest rates, the expected nominal revenue from capital investment is likely to shift in the same direction as nominal borrowing costs.

If corporations want further protection from changes in interest rates, they can pay to get it. They might, for example, make use of the financial futures markets which have developed quite rapidly in recent years. The total volume of 3-month Treasury bill contracts on the financial futures markets rose from $100 billion in 1976 to over $2.7 trillion in the first 10 months of 1980.

One specific borrowing sector that has lost much of its protected status as a result of the new competitive environment is housing. The thrift institutions no longer enjoy many of the special advantages

they once had and thus cannot continue to channel funds to housing at artificially low interest rates. Although changing competitive conditions may mean a somewhat higher and more variable cost of funds for thrifts, the new regulatory environment should help to stabilize their deposit flows and hence the supply of mortgage funds. Furthermore, the Federal Government has supported the expansion of secondary mortgage markets to attract additional capital into housing. The secondary market institutions—the Federal National Mortgage Association (FNMA), the Federal Home Loan Mortgage Corporation (FHLMC), and the Government National Mortgage Association (GNMA)—have expanded the scope and volume of their activities. Market acceptance of new financial instruments like the mortgage-backed securities issued by these institutions has grown, thus cementing more firmly the link between capital markets and mortgage credit. GNMA securities alone have increased to more than $90 billion in the past 3 years. While these developments in financial markets should tend to increase the variability of mortgage interest rates, they should also tend to reduce the cyclical swings in mortgage money availability. It is too early to tell whether these changes will mean more or less cyclical variation in home sales and residential construction.

Depository Institutions

Banks and thrift institutions now operate in a much more competitive environment, and the risks associated with interest rate swings are much greater. Partially offsetting these developments are the broader range of financial instruments they can offer and their expanded lending powers.

But legal and regulatory limitations still exist that, if liberalized, would allow further adjustment to new financial conditions. Current law, for example, restricts banks and thrifts from expanding into natural market areas. A recent Administration study concluded that a liberalization of Federal restrictions on geographic expansion by commercial banks would increase banking competition in local markets and result in more and lower priced services. Some tentative steps toward the removal of the barriers to geographic expansion likely will occur in coming years. There may also be a further loosening of the asset restrictions on thrifts and commercial banks—for instance, allowing thrift institutions more leeway to make business loans or allowing both types of depository institutions broader powers to hold financial futures contracts and stocks, and to underwrite bond issues and insurance.

Even with changes like these, however, some institutions will find it difficult to adjust. Since the government shaped the financial world that existed when these institutions were founded, it now faces the

task of helping them evolve in an orderly manner. Success will depend in part on general economic conditions, and as these conditions change, the regulators must be prepared to react.

A case in point is the gradual removal in the last few years of ceilings on deposit interest rates. It was initially anticipated that relaxation of the ceilings, combined with an eventual liberalization of the types of assets that could be held, would allow thrift institutions to gradually correct imbalances in their portfolio maturities and thus limit their exposure to rising interest rates. But quick acceptance of floating-rate certificates by small savers at a time of rapidly rising interest rates has raised the interest expense of these institutions much faster than they have been able to increase the revenues on their loans. While most of the thrifts will achieve a better asset/liability balance in the long run, the current squeeze on profits resulting from rapidly rising market interest rates threatens some of them with serious financial difficulties.

One way to deal with this problem would be to subsidize endangered institutions, perhaps by buying their low-yield, long-maturity assets (mortgages) at above-market prices. This would involve a substantial budgetary outlay, however. Another option would be to permit the troubled institutions to fail outright, but this approach would risk destabilizing the financial markets and could result in significant losses to uninsured depositors and the Federal insurance organizations.

Neither of these approaches responds directly to the inefficiencies created by remaining regulatory practices which continue to compartmentalize depository institutions. Thus, a third and preferred alternative would be to remove restrictions that now prevent efficient consolidation among financial firms. This would require further deregulation to allow mergers across State lines and between different types of institutions, since these restrictions remain a major obstacle to the efficient reorganization of financial institutions. As a result of these changes, the weakest institutions would find more opportunities for mergers. While this would not solve the problems of all endangered institutions, it would allow a more stable reordering of the financial sector where appropriate while minimizing the budgetary cost and sharply reducing the risk to financial markets of policies aimed at the remaining problem.

Conclusions

During the last two decades the pace of innovation in the financial markets has been quite rapid as depositors, borrowers, and financial institutions have sought new ways to adapt to high and variable interest rates. Unfortunately, a lag in both legislation and financial regulation meant that a considerable amount of innovation was applied to

finding ways around outdated regulatory barriers. But changes in the regulatory structure in the seventies, culminating with the Depository Institutions Deregulation and Monetary Control Act of 1980, have aided greatly in making regulation compatible with the new financial environment. The challenge for financial regulatory policy during the 1980s will be to rationalize regulation even further to achieve the appropriate balance between unnecessary restraints on the market and the regulatory goals of preserving the safety and soundness of the financial system and providing the tools for an effective monetary policy.

THE ALTERED ROLE OF AGRICULTURE

For decades, U.S. agriculture was a sector with chronic excess capacity and low returns. Productivity increases that exceeded growth in demand resulted in declining real food prices for more than a quarter of a century.

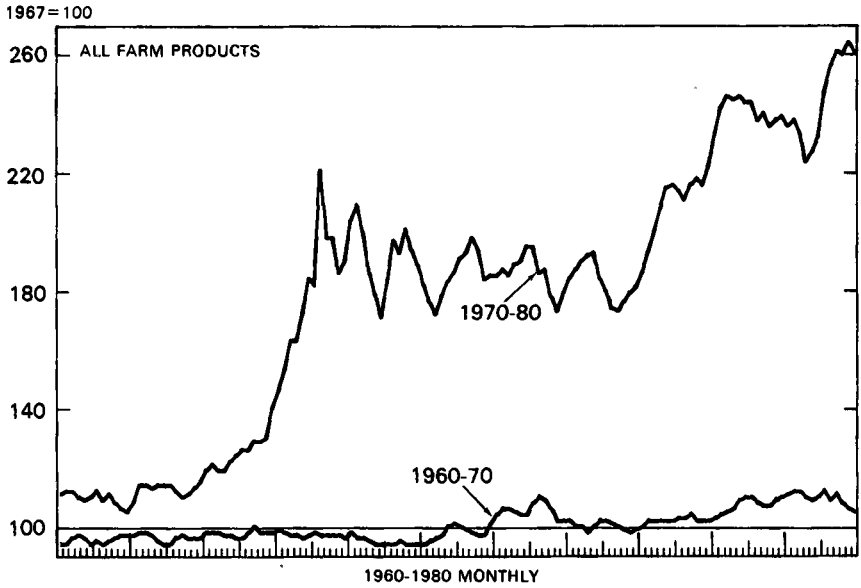
The decade of the seventies saw virtually all of these circumstances change. Farm and food prices increased and became more volatile (Charts 5 and 6). A modest shortfall in the world crop and major trade policy changes in the United States and the Soviet Union contributed to the initial price shock in 1972, and the growing worldwide demand for food helped sustain demand pressures from 1973 on. The large surpluses of grain purchased by the Federal Government in earlier years to increase farm income had been sold by 1973 and, by 1974, for the first time in more than two decades, the cropland base was nearly fully employed. It has remained that way since then. To produce more from the available land, the use of industrial inputs increased. Chemical use, for example, increased nearly 37 percent from 1970 to 1980.

The cash receipts of farmers increased dramatically after 1972, but production cost increases eroded much of the apparent gain in purchasing power. Prices paid for production inputs in 1980 were more than 2½ times their 1970 levels. The price of agricultural real estate increased an average of 13 percent per year, nearly twice the average annual inflation rate for the decade. Still, the average per capita disposable income of all farmers during the 1970s from both farm and nonfarm sources was nearly 90 percent of that earned by the nonfarm population, up sharply from the 65 percent average figure of the 1960s.

Meanwhile, the rapid exodus of labor from agriculture virtually stopped as the farm labor force stabilized at about four million persons. Not only was there a substantially smaller and more stable farm population, but there were substantially fewer farms, and a smaller

Chart 5

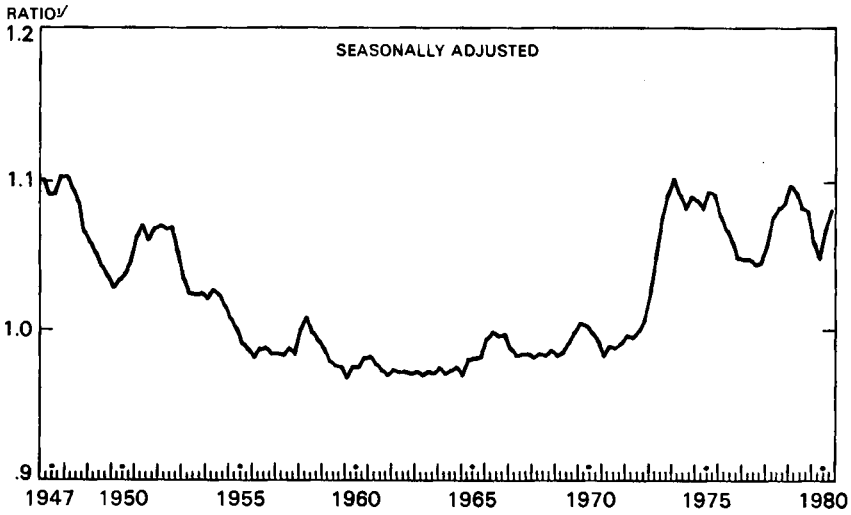
Prices Received by Farmers



SOURCE: DEPARTMENT OF AGRICULTURE.

Chart 6

Relative Food Prices



1/RATIO OF IMPLICIT PRICE DEFLATOR FOR FOOD TO IMPLICIT PRICE DEFLATOR FOR ALL PERSONAL CONSUMPTION EXPENDITURES.

SOURCE: DEPARTMENT OF COMMERCE.

proportion of the existing farms produced most of the Nation's food and fiber. In 1940, when there were more than six million farms, the largest 2 percent accounted for about 25 percent of all sales. By 1980 less than half as many large farms accounted for nearly 40 percent of all sales.

EXPANDING AGRICULTURAL EXPORTS

Perhaps the most significant change in American agriculture during the seventies, however, was the huge expansion in exports. Grain exports tripled in volume, while the dollar value of all agricultural exports increased nearly sixfold. But this growth in value and volume came with increased volatility in prices and production.

The present competitive advantage of U.S. agriculture is impressive. In the 1960s, exports represented 14 percent of total farm cash receipts; in 1980, cash receipts from exports represented nearly 30 percent of the total (Table 12). To accommodate the increase in export volume, the amount of land devoted to the production of crops for export nearly doubled. Transport systems and storage facilities have been pushed to their limits at times. Nonetheless, agricultural exports have not increased their share of total U.S. exports. Since the end of World War II, agriculture's share of total exports has remained at approximately 20 percent.

TABLE 12.—*The role of agricultural exports, 1930–80*

[Calendar years]

Period	Agricultural exports		
	Value (millions of dollars) [1]	As percent of all exports	As percent of farm cash receipts
1930–39	785	30.6	10.5
1940–49	2,294	22.5	10.7
1950–59	3,593	22.3	11.4
1960–69	5,864	21.6	13.9
1970–79	19,668	20.5	22.1
1976	22,997	20.3	24.1
1977	23,636	19.9	24.2
1978	29,384	20.8	25.4
1979	34,745	19.5	26.2
1980 [2]	40,500	19.3	29.1

[1] F.a.s. (free alongside ship) value.
[2] Estimates.

Sources: Department of Agriculture and Council of Economic Advisers.

The increased importance of exports, coupled with the disappearance of surplus grain stocks and nearly full use of the cropland base, has exposed U.S. farmers and consumers to an unaccustomed degree of instability in commodity prices. Part of this instability comes about because of unpredictable world weather, but much of it has been the result of our own policies and those of our trading partners.

Many nations have policies to shelter their economies from extreme fluctuations in commodity prices. The European Community, for example, maintains higher farm prices in member countries by varying duties on farm commodity imports and the subsidies on exports. These practices tend to make world commodity prices more variable by increasing the variability of European Community export and import levels. European food prices are therefore more stable than ours but are generally higher, with a resulting reduction in the European standard of living.

Centralized trading decisions by other grain exporters and by most of the grain-importing countries have also tended to increase the volatility of world grain prices. Canada and Australia, for example, routinely impose quantitative restrictions on grain exports when domestic price stability is threatened. Furthermore, an increasing proportion of exported grain is going to countries that do not allow the free movement of prices to allocate resources internally. The centrally planned and certain developing countries, for example, rely on the United States and other major exporters for marginal supplies, making "needed" purchases without much apparent regard for price. Taken together, the efforts by other countries to stabilize their domestic food prices and supplies have shifted the costs of increased price variability onto farmers and consumers in the United States.

Prices and income may vary at times as a result of international political considerations. The January 1980 ban on the sale of certain agricultural products to the Soviet Union originated from considerations other than the typical tug-of-war between consumer prices and farm income, namely, foreign policy considerations following the Soviet invasion of Afghanistan. The Administration was obviously aware of the potentially adverse economic effects of that sales suspension and took significant steps to minimize them.

Unpredictable actions of other countries can also impose price shocks on the United States. A unilateral reversal in agricultural policy by the Soviet Union or China or a deterioration in East/West relations would have major implications for the U.S. farm sector. Thus, the fact that our growing food trade is now affected by international political affairs is a source of added risk to private investors in the agricultural sector.

The need for stabilization mechanisms in this environment should be evident. Agricultural demand and supply are both quite inelastic in the short run. Small changes in either can lead to large changes in price. While such price movements serve the important economic purpose of allocating available supplies, they can also have disruptive consequences. Rising corn prices, for example, set in motion adjustments in the livestock sector that have implications for domestic meat

prices for years in the future, regardless of the size of succeeding corn harvests. The domestic livestock sector, in fact, is still making adjustments stemming from the very high grain prices of 1972–74.

Grain Reserves

Reserve stocks stand as the only real source of protection against inflationary rises in the price of food in market economies during periods of short supply. They also cushion farmers against declines in the prices of agricultural commodities during temporary periods of overproduction. If the flow of information and the credit markets were perfect, private agricultural stocks might be expected to provide the needed price stabilization. But the flow of information and the credit markets are not perfect. Moreover, private holders of agricultural commodities are unlikely or unable to take account of macroeconomic effects when they make decisions on whether or not to store commodities.

The program of farmer-owned grain reserves implemented by the Administration in 1977 (discussed in the 1980 *Report*) has proved to be a popular, flexible, and efficient mechanism to cushion price shocks. The Administration's initial stock objective was achieved by early 1979, when more than 11 million tons of wheat and 20 million tons of feed grains had been placed in reserve. When prices then increased because of reports of a smaller-than-expected Soviet harvest, the stocks were released. By mid-October 1979 farmers had withdrawn over 40 percent of the wheat and sorghum and more than 25 percent of the corn in the reserve. When sales to the Soviet Union were halted in early 1980, stocks flowed back into the reserve and helped keep farm prices from falling as much as they would have without it. Those stocks are now available to help offset the adverse effects of the 1980 summer drought.

Clearly, grain prices and farm income over the past 4 years would have been more volatile without such a compensating mechanism. It is also probable that export earnings were increased because more grain was available for export during periods of high prices. In any case, the availability of large reserves allowed us to retain our export markets and enhance our reputation as a reliable supplier even in periods of short world supply and high prices. Moreover, the only nonrecoverable taxpayer costs of this program have been payments for storage and interest costs on the Commodity Credit Corporation (CCC) loans extended to farmers when grain was placed in the reserve.

The Reduced Need for Subsidies

The improving economic health of the Nation's farmers suggests that subsidizing farm income is less essential today than it was in the

past. The growing importance of exports makes it more likely that the benefits of U.S. grain reserves will accrue disproportionately to foreign customers. Together, these observations suggest two things: first, that grain sold from the reserve should be priced high enough to cover not only the cost of grain production but, if possible, program costs as well; and second, that the incentives to place grain in reserve should be no greater than necessary to meet our objective of price stabilization. Present policy, including administrative procedures and legal authority, does not serve either of these objectives as well as it might.

Current law, for example, requires waiver of the interest that would normally be paid by farmers on CCC loans and taxpayer payment of the storage costs. Thus, if the grain is sold at a lower price than would be required to cover these carrying costs, export customers benefit because American taxpayers subsidize the storage of grain. But if grain from the reserve is sold at prices high enough to cover these costs, farmers receive a windfall profit that may be unnecessary to assure the accumulation of reserves that will accomplish the price stabilization objective.

By requiring farmers to pay the storage costs and the interest on the loans, the beneficiaries of the reserve (both U.S. and foreign customers) would be paying for the system's operation. Requiring farmers to pay such costs would, however, probably result in reserves too small to accomplish the price stabilization objective. To attract the desired stocks, farmers might be offered higher loans for grain entering the reserve. The most efficient way to acquire a reserve of a given size would be to require farmers to bid for the right to place grain into the reserve. Under such a plan, farmers offering to place grain in reserve at the lowest loan rates would be authorized entry.

The flexibility granted by the Agricultural Act of 1980, which authorizes higher-than-normal loan rates for grain entering the reserve, might be used to implement such a plan. Legislative changes would, however, be required to allow the farmer to pay storage and interest costs.

In addition to subsidizing the grain reserve, the Federal Government has subsidized the use of key agricultural inputs. Programs under which the Federal Government has shared with farmers the costs of soil conservation, land development, pest control, and the like, have been commonplace. As farm exports grow, so will the extent to which such subsidies transfer national wealth to export customers. To avoid unintended transfers, the resources committed to agriculture must be properly priced. This means, for example, that the price of exported grain should reflect the full costs of transporting it. Similarly, the Nation's limited natural resources, such as un-

derground water resources once thought virtually unlimited, should now be priced to more appropriately reflect their limited availability.

FUTURE CAUSES OF RISING FOOD PRICES

When food prices soared upward in 1973, many economists saw it as a temporary deviation from the longer-term trend, and the apparent return of surplus production in 1976–77 helped support this notion. But food prices did not fall to their earlier trend line (Chart 6). While exhibiting the same increase in variability as commodity prices, food prices remained high relative to other prices throughout the 1970s, and additional price increases are likely for at least the first half of the 1980s.

The Rising Demand for Output

Projected increases in exports and in the use of grain domestically for animal feed indicate sustained upward pressure on commodity prices for the next several years. Other economic forces will place still more pressure on agricultural resources, particularly cropland. Rising energy prices, for example, are increasing the demand for natural fibers, primarily cotton. High sugar prices and the expanding use of sugarcane for ethanol production in Latin America are expected to double the demand in the United States for corn as a sweetener by 1985.

But perhaps most important is current energy policy which encourages the production of alcohol fuels from corn. This policy implies the need for an additional 370 million bushels of corn and a 5 percent increase in corn cropland by the end of 1982. The ethanol produced from the corn would replace about 60,000 barrels of oil per day—about 1 percent of U.S. oil imports. Other things being equal, such an increase in demand would increase the season average price of corn about 10 percent. The high cost of producing ethanol and the higher corn price, even when offset by the value of the ethanol by-products and an increase in export earnings, would mean that the Nation was paying nearly twice the present world price for each barrel of foreign oil displaced. The benefits of the gasohol program may be substantial and difficult to quantify, but its costs are large and its pressures on cropland significant. Furthermore, given the incentives already authorized, the amount of corn required for gasohol could more than double by 1985.

Pressures on Farm Input Use

By itself, a growing demand for agricultural products would not necessarily mean rising real prices. Advances in crop yield and other productivity gains throughout much of the postwar period made it possible to increase production in line with steadily growing demand without bringing high-cost, marginal resources into use. But this is

unlikely to happen in the future in part because of energy. In 1975, when data first became available, energy-intensive inputs (excluding fertilizer) accounted for 23 percent of the variable cost of producing an acre of corn. Those same inputs accounted for 31 percent of the variable cost in 1980. Higher real prices for these inputs will be a disincentive to their use and intensify the pressure to use additional land and water resources. These resources are also more limited. In 1972, for example, more than 16 percent of the cropland base was being withheld from production by government policies. None is being withheld today. To raise production further, land will have to be diverted from other uses and developed for crop production. The cost of doing so will be reflected in higher agricultural prices.

Changes in policy, however, could help to ameliorate future increases in food prices. Certain land-use patterns remain fixed by acreage allotments. Fruit and vegetable growers sometimes restrict output or otherwise control marketing to enhance prices and then seek restrictive trade policies to protect those higher prices. Certain regulatory procedures now impose economic penalties on the use of technologies that would raise productivity in the food system. Such policies deny both producers and consumers the benefits of technological change. Finally, certain price support decisions continue to be statutorily dependent on movements in an outdated parity index that has little relation to product-specific costs of production. The dairy price support program is perhaps the best known example here. Such policies enhance the economic position of some farmers, while they perpetuate existing—but not necessarily efficient—patterns of resource use. Such inefficiency is particularly costly in a period of relative resource scarcity and limits agriculture's potential contribution to economic growth.

POLICY DIRECTIONS FOR THE 1980s

Significant progress has been made over the past 30 years in adjusting U.S. agricultural policies to a changing world. More importance has been placed on the allocative function that can be performed by prices, and there is significantly less direct government interference with producer decisionmaking.

This Administration's farm policies have contributed to the evolutionary process. The implementation of a farmer-owned grain reserve program stands out because of its flexibility and its success in moderating price fluctuations stemming from changes in production and consumption levels. Additionally, the recent formation of a government-owned food reserve increases the likelihood that food will be available to foreign nations during emergency situations, even when world prices are high and commercial supplies are limited. The 1980 passage of a statute permitting the creation of a partially subsidized,

comprehensive, actuarial crop insurance program means that there will be a more equitable sharing of natural disaster risk between farmers and taxpayers. Eventually this new program—which expands the private sector's role in insuring farmers against such risks—will replace the more limited free insurance that is now provided for certain farmers through the fully subsidized disaster payments program.

Future changes in agricultural policy must build on this foundation. In particular, attention must be given to the use of natural resources. Past agricultural policies have treated land and water as gifts of nature. The need for pricing them in ways that more appropriately reflect their true social value will intensify. Specific programs must be developed for this purpose; conservation of soil and pricing of other natural resources can no longer simply be by-products of programs to enhance farm income.

Taken together, these policy issues point to a broader reliance on market forces, but the critical importance of food to national security will dictate a continued role for government in determining agricultural policy. Finding new and more flexible ways to use resources more efficiently while guarding against price volatility will be the principal farm policy challenge of the 1980s.

TRENDS IN INDUSTRIAL AND LABOR MARKETS

The preceding sections described developments in energy, regulation, the financial markets, and agriculture that have put severe pressure on the economy's adaptive capabilities. Each case illustrated the need for policies that facilitate adaptation to future as well as current developments. These four areas are not unique, however. Throughout the economy, deep-seated trends are increasing the need for greater adaptability.

INDUSTRIAL CHANGE

One such trend is the elimination of previous competitive advantages in some sectors and the creation of new ones in others. In the case of automobiles, for example, competition on the basis of technological advances and fuel economy is replacing competition based on style and performance. Vehicles manufactured in large volume according to stringent quality standards and utilizing the latest technology are replacing vehicles whose style changed annually but whose technology evolved more slowly. The emergence of the so-called "world car," with its international sources of key components, is evidence that this remarkable change has not been limited to the United States.

Nor are these kinds of competitive pressures new. Similar pressures over the years have occurred in textiles, apparel, and footwear.

In each of these industries today, the profitable U.S. producers compete in ways very different from their predecessors, whether by manufacturing specialty fabrics, blue jeans, or canvas shoes.

What is new, however, are the widespread pressures for substantial adaptation due to recent changes in energy and capital markets. These pressures are also occurring at a time when the economy is growing slowly. In the past, growth has often served as a "shock absorber" to cushion change, but the slow pace of growth has made the problems of readjustment more painful. Furthermore, some of the industries experiencing intense change are large and highly visible regional employers. There is simply no easy way to absorb the closing of an integrated steel facility or an automobile plant that dominates its local labor market. Lastly, these pressures for job protection are occurring at a time when the changing composition of the labor force may be tending to reduce mobility.

CHANGING LABOR FORCE COMPOSITION

During the past decade, the number of people with jobs grew at record rates, and the average age and experience of workers fell. During the coming decade, the growth of the labor force will slow considerably, and the average worker will be older and more experienced.

Both of these changes result from two related demographic phenomena: the maturing of the baby-boom generation and the rise in female labor force participation rates. From the end of World War II until the beginning of the 1960s, the Nation experienced a sharp rise in the number of births which temporarily reversed the long-term decline in birth rates. This generation began entering the labor market in the 1960s and the influx of new workers continued during the 1970s. The percentage of the population aged 16 to 24 rose from 12.1 percent in 1960 to 15.8 percent in 1970 and 17.0 percent in 1979.

Female participation rates increased gradually during the baby-boom years. An even greater increase in the number of women workers has occurred in more recent years. The rate of participation in the labor force increased from 34 percent to 39 percent between 1950 and 1965; by 1980, more than 51 percent of the country's adult women were in the labor market.

The maturing of the baby-boom generation and the sharp rise in the number of working women meant that U.S. labor markets had to absorb record numbers of new and inexperienced workers. During the 1970s the civilian labor force increased at an average annual rate of 2.5 percent, compared to 1.1 percent during the 1950s and 1.7 percent during the 1960s. The influx of young workers, combined with an increase in the number of older workers retiring early, pro-

duced a decline in the median age of the labor force from 39 years in 1965 to 34 years in 1980.

As discussed in Chapter 1, the economy did remarkably well in providing jobs for these new workers. In fact, the unemployment rates for white youths and adult women have not increased relative to those of prime-age men. Unfortunately this success was not evenly spread across demographic groups. The high unemployment rate for young blacks, which has deteriorated considerably and is currently well above 30 percent, indicates serious shortcomings in labor markets or other social institutions. This unemployment problem has persisted in spite of substantial Federal efforts to improve the quality of primary and secondary education for minorities, to expand post-secondary training programs, and to provide on-the-job training in public sector jobs.

During the next decade the number of people reaching adulthood will continue to be larger than the number reaching retirement age, but the generation entering the work force will be considerably smaller than the cohort which began work in the 1960s and 1970s. Even if female labor force participation rates continue their rapid rise, the Bureau of Labor Statistics (BLS) projects that labor force growth will average only 1.3 percent per year during the 1980s.

The decrease in entrants into the labor force during the next decade should have several effects. First, the increasing average age of the labor force will tend to lower the aggregate unemployment rate. The rate was higher during the 1970s at least in part because the transition from school or home to a job takes time; young people and women entering the labor market may be counted as unemployed during that search period. In addition, as they try out different career possibilities, new workers tend to change jobs more often than experienced workers, often with spells of unemployment between jobs.

The transition to an older labor force will probably lead to some increase in productivity as the average level of experience rises. One estimate suggests that shifts in the age-sex composition toward groups with below-average experience reduced productivity growth by 0.4 percentage point per year between 1966 and 1973. Since then, the reduction has been about 0.2 percentage point per year. During the 1980s, changes in the age-sex ratio should raise productivity by 0.1 percentage point annually.

Demographic changes will also tend to raise productivity by making it easier to increase the capital-labor ratio. Even if the capital stock only grows at past rates during the 1980s, the amount of capital per worker will grow as the rate of growth in the number of workers falls. Moreover, the relative growth in the number of middle-aged

members of the population, who typically have higher rates of saving than either the young or the elderly, should increase the Nation's saving rate and facilitate growth in the capital stock.

But a third effect of the rising average age and experience of the labor force will be a decrease in flexibility. Shifts in the demand for labor by region, industry, and occupation are most easily met when young workers just entering adulthood are available to move to areas where the growing sectors of the economy are located. These younger workers are not tied to the skills gained from long experience in one job, they generally do not own homes, and their ties to communities are weaker. Further, young workers normally have more years over which to recoup the costs of acquiring new skills or moving to a new community.

Older experienced workers and individuals in two-earner families are often much less flexible in changing jobs, industries, occupations, or communities. If there is a decline in the demand for the type of labor they supply, they are less able and willing than younger workers to move or to abandon old skills or to learn new ones. Firms are less interested in absorbing the costs of training older workers for new careers. Therefore, although older workers are less likely to lose their jobs, if their jobs do disappear they are likely to have a harder time than young workers in finding a new job and are likely to be unemployed for a longer time. Thus, although total unemployment rates will tend to fall as the labor force ages, the percentage of workers unemployed for extended periods may rise.

Although U.S. labor markets may become less flexible in the future, we currently appear to be able to find new jobs for displaced workers more rapidly than several major European economies. The more rapid the adjustment to employment shocks, the lower will be the percentage of workers unemployed for extended periods. Table 13 presents the long-term unemployed as a percentage of the total labor force for the United States, Germany, France, and the United Kingdom. Although these percentages undoubtedly reflect international differences in definitions of employment and in stages of the business cycle, they do suggest that American workers suffer less long-term unemployment than their European counterparts.

However, the adjustment to new patterns of labor demand in the economy of the 1980s may be more difficult than it has been in the past, and government assistance may be necessary to soften the shocks of structural change while promoting flexibility. Such programs can be designed to move workers to jobs or jobs to workers. The former include retraining programs for the unemployed as well as relocation subsidies to encourage them to move from depressed areas to communities with excess demand for labor. The latter in-

clude government investments in local infrastructure and investment subsidies to encourage expanding firms to replace contracting ones. Whatever combination of policies is chosen, efforts to cushion the shocks of adjustment should not themselves discourage adaptation.

TABLE 13.—*Long-term unemployment as percent of labor force, 1973–80*

Year	United States	Germany	France	United Kingdom
1973	0.89	0.43	1.57	1.22
1974	1.00	0.94	1.66	1.11
1975	2.63	2.38	2.64	1.80
1976	2.41	2.40	3.06	2.73
1977	1.92	2.34	3.47	3.25
1978	1.34	2.25	3.72	3.40
1979	1.14	1.92	4.42	3.35
1980	1.71	(1)	(1)	(1)

[1] Not available.

Note.—Long-term unemployment is defined as 15 weeks or longer for the United States, 14 weeks for the United Kingdom, and 3 months for France and Germany.

Source: Organization for Economic Cooperation and Development.

THE DILEMMA OF INDUSTRIAL POLICY

Chapter 1 of this *Report* and the preceding sections of this chapter describe an economy facing increased pressure to adjust to changing economic circumstances in a period of restrained growth. The increase in Federal involvement in areas previously considered to be the domain of private decisionmakers has also been detailed. The recognition that increased adjustment is needed and that the resources to smooth the path of this adjustment are limited, has led some to propose an explicit "industrial policy" to guide the broad collection of Federal activities affecting individual industries and sectors. These proposals, and the conflicting pressures they have created, illustrate the dilemma stated at the beginning of this chapter: Increased Federal involvement in the economy carries with it both the potential to improve and the threat of reducing the economy's efficiency and adaptability.

The steel industry, for example, faces a major financial burden in complying with clean air and water mandates. It is also beset with major problems of economic adjustment because of vigorous foreign competition, technological evolution, changes in labor and raw material costs, and geographic and compositional shifts in the demand for steel. Similarly complex circumstances have been developing in the auto sector for several years. In 1980 the combination of recession and sharply higher gasoline prices focused public attention on the domestic industry's longer term problems of coping with foreign competition, improving productivity, and retooling to meet the

changed needs of customers. Rubber is a third large U.S. industry that has been confronted by intense structural problems.

The realization that many of the dislocations brought about by new conditions have been disproportionately concentrated in certain regions of the country, and growing recognition of the scale of investment in our industrial infrastructure necessary to meet all our social and economic goals, led to a broad-scale Federal review of policies for promoting and channeling investment, encouraging innovation, and dealing with labor-market disruptions. The President's Economic Revitalization Program, described in Chapter 3 of this *Report,* emerged from this review.

Two central issues arose in these discussions: first, the extent to which the Federal Government ought to be involved in determining the pace of growth and decline in individual industries and regions—in other words, the extent to which the government ought to be involved in "picking winners" or supporting older industries that are faced with major adjustments; second, the extent to which the government ought to supplant the private sector in allocating capital if that is required by the objectives of industrial policy.

The review concluded that either type of Federal intervention would go beyond the legitimate needs for balance, consistency, and flexibility in Federal actions affecting individual industrial sectors.

For one thing, it is presumptuous to assume that successful identification of winning and losing industrial sectors is possible. Moreover, even within so-called "losing" sectors, individual firms often outperform many of the firms in "winning" sectors. As an example, one need only compare the outstanding performance of many "minimill" operators in the beleaguered steel industry to that of many less profitable firms in the highly touted semiconductor industry.

Attempts to pick winners or reinvigorate declining industries introduce considerations into strategic industrial decisions that, while not now absent, are certainly less directly felt. Greater government involvement in the detailed workings of the economy has already increased the political aspect of economic decisionmaking and led to constant pressures for the Federal Government to aid firms, regions, and industries. Establishment of an explicit industrial policy, together with the authorities for implementing it, would intensify these trends.

The consequences to the economy of reductions in efficiency and flexibility that often accompany government intervention have already been detailed in this chapter. But at least three special dangers would be associated with the development of an overt government role in picking winners:

First, a successful policy of identifying and supporting promising sectors implies a willingness on the part of the government to let

some of the firms in the chosen sectors fail. A portfolio of venture capital investments designed to pick only winners typically ends up with a few large winners and many losers. However, the government's necessary sensitivity to income losses, intensified by the fact that it would bear a special responsibility for a chosen sector, makes it difficult, if not impossible, to tolerate such a portfolio. The more likely outcome—one frequently observed in other countries—would be a reluctance to abandon individual firms that fail. This could more than offset any gains achieved by the successful few among the chosen firms.

Second, there could be a tendency to implement a strategy of picking winners by excessive reliance upon policies where the government has broader discretion (e.g., trade policies) rather than designing policies specific to the problem at hand. The resulting use of easily available, but not necessarily efficient, policy instruments would create an unbalanced response and introduce additional distortions and rigidities into the economy. Adding to this tendency would be the policymaker's inevitable recognition that a policy tool designed for one purpose can often be used for another. For example, the economic prospects of an industry could be indirectly manipulated by changes in the stringency of government regulation. Such changes, however, when motivated by objectives of industrial policy, might be counterproductive to achieving the purpose for which the regulation was intended.

Third, to avoid "wasteful duplication," the government would be likely to centralize the process of picking winners. Such centralization would forgo the advantages of risk-diversification that come from decentralized decisionmaking and would further heighten the pressures to protect losers among the chosen sectors.

Similar arguments would apply to policies aimed at manipulating the normal workings of capital markets. While prudence argues strongly for policies which remove impediments to the efficient allocation of capital, prudence also suggests that a centralization of explicit allocation authority would run counter to the overriding need for flexibility in the present economic environment.

PREFERRED POLICY APPROACHES

While it is inappropriate for the government to utilize its policy instruments to support winners and discourage losers or to centralize the allocation of capital resources, government policies can be used in appropriate ways to make a difference in the economy at large and in individual industries. Tax policies, for example, can influence the level of investment and risk-taking in the economy as a whole without excessive intrusion into the affairs of individual firms or industries. Although regulatory policies, by their very nature, constitute greater

involvement in the operation of individual firms or individual sectors, they too can be designed to attain their goals with minimal intrusion and can take into account the circumstances of individual industries.

Trade policies also shape decisions in individual markets. Without choosing winners and losers, it is still possible for the government to reduce constraints to free international transactions, to police these transactions for violations of national law and international trade agreements, and to screen individual cases carefully to afford relief from unfair import competition.

Agricultural policy decisions can be designed to reduce instability in that sector and to ensure that those receiving the benefits of such policies also pay for the burden such policies impose. Similarly, the continued deregulation of financial institutions can assure the aggressive pursuit of efficiency and innovation in that sector. Labor market policies can try to help workers in declining regions or industries adapt more rapidly and with less human suffering to changing conditions.

In sum, recognition that the numerous policies of the Federal Government exert a substantial influence on individual sectors of the economy leads logically to a search for coherence in policy. The pursuit of such coherence is both justified and desirable when it involves the thoughtful coordination of policies in areas where government intervention is necessary. The danger lies in the unwise manipulation of policy variables designed for one set of purposes to attain goals which can be better achieved by the private market.

CHAPTER 3

The Economy: Review and Prospects

THE U.S. ECONOMY IN 1980 felt the effects of the huge 1979 oil-price shock. The 5-year recovery and expansion that followed the 1974–75 downturn came to an end with a sharp but brief recession and the underlying rate of inflation moved up to the 9- to 10-percent range. The most striking feature of the year, however, was the volatility of economic developments. Real gross national product (GNP) declined at a record rate in the second quarter but advanced thereafter, producing the briefest recession on record. Interest rates surged to record heights, plunged downward, and then rose to new peaks and declined again, all within the space of 9 months. Overall, these developments made for a historically unprecedented year.

While the outlook is for only a modest pace of recovery in 1981, the persistence of unacceptably high inflation and the Nation's vulnerability to energy shocks call for continued restraint in both monetary and fiscal policy. A modest-sized tax cut combined with restraint in Federal spending, however, would be compatible with this prudence. And if, as the Administration has proposed, a substantial part of the tax cut is oriented toward business investment, we can help support the recovery in a way that comes to grips with the country's longer-run needs.

A REVIEW OF 1980

The resilience that had characterized the economy during 1979 ultimately gave way to pressures from sharply higher energy prices and policy measures undertaken in the fight to cool inflation. Over the 4 quarters of 1980 real GNP fell 0.3 percent, but the pattern during the year was quite uneven. The first quarter's 3.1 percent annual rate of growth in real GNP was followed by a record 9.9 percent rate of decline in the second. After midyear, much to the surprise of most economic forecasters, the economy rebounded; real GNP grew at a 3.1 percent rate during the second half of the year. (All national income and product account data for the fourth quarter of 1980 are based on highly preliminary estimates.)

The weakness of the economy during the first half of 1980 led to significant deterioration in labor markets. The unemployment rate

rose from 6.0 percent in December 1979 to 6.3 percent in March and then spurted to a peak of 7.6 percent in May. The rate remained between 7.4 and 7.6 percent for the rest of the year. During the first half of the year, employment declined by 1.0 percent, a decline of 1 million jobs. From June to December, employment grew 0.5 million, thus reversing a substantial portion of the first-half loss. The labor force grew 1.3 percent over the 4 quarters of the year.

The rate of inflation increased in 1980. The implicit price deflator for GNP rose 10.0 percent over the 4 quarters of 1980, a 1.9 percentage point increase over the 1979 rate. For the 12 months ending November 1980 the consumer price index (CPI) for all urban consumers rose 12.6 percent—the same rate of increase as in the 12 months ending in November 1979. Due to the special circumstances created by increases in the prices of food and energy, and the treatment of home purchase and finance in the CPI, this latter comparison understates the rise in inflation in 1980. Excluding these factors, the CPI rose 9.9 percent as compared with 7.2 percent in 1979.

Wage rates, which had shown moderation during 1979 despite the rise in inflation, accelerated in 1980. Average hourly earnings grew 9.3 percent, up 1 percentage point from the 1979 rate. For the year ending with the third quarter of 1980 productivity was virtually unchanged, although this was an improvement as compared with the 1-percent decline recorded in 1979.

The year saw continued improvement in the U.S. international position. After absorbing the huge 1979 increases in our foreign oil bill, the U.S. balance of payments moved sharply into surplus in the second half of the year. All other major oil-importing countries, by contrast, are experiencing substantial current-account deficits. The U.S. dollar remained strong in relationship to other currencies throughout much of the year. At year-end, on an average weighted basis, its value was 6 percent higher than at the beginning of the year. The United States reduced its total energy use in 1980. In addition, as compared with 1979, oil imports declined by 20 percent to about 6½ million barrels per day at year-end. In 1980 we imported less oil than in any year since 1975. While a portion of this reduction can be traced to weakness in economic activity, much was due to intensified conservation efforts that have followed the recent rapid increases in energy prices.

AN OVERVIEW OF THE YEAR

The slowing in the growth of the economy that occurred in 1980 was largely the consequence of events that began in 1979.

The first of these was the significant disruption in the world oil market triggered by lost Iranian oil production. Extensive efforts to

build up oil inventories and maintain adequate supplies boosted the price of imported oil purchased by U.S. refiners by 94 percent during 1979. This, together with the phased decontrol of the prices of domestically produced oil, resulted in the average refiners' acquisition price for all oil in the United States rising from $13 per barrel in January 1979 to $24 per barrel in December 1979. This huge increase added to inflationary pressures and reduced purchasing power. The Council of Economic Advisers has calculated that the drag on purchasing power due to these higher oil prices reached 2 percent of GNP during 1979.

A second restraining force evident at the end of 1979 was the stance of monetary and fiscal policy. A major goal of macroeconomic policy since early 1979 has been to minimize the inflationary consequences of the oil-price shock by avoiding the spillover of accelerating consumer prices into wage demands, then higher business costs, and eventually higher long-term inflation. The Federal high-employment budget surplus (discussed in more detail later in this chapter), which had increased by $7½ billion in 1978, tightened an additional $13½ billion in 1979. Efforts to restrain growth in money and credit resulted in rising short-term interest rates during 1979, especially in the second half. From July to December 1979 the 91-day Treasury bill rate rose from 9.3 to 12.1 percent, while the prime rate increased from 11.5 to 15.5 percent.

A third source of potential demand restraint, which became evident at year-end 1979, stemmed from imbalances in the spending behavior of households. In the last half of 1979 real disposable income rose 1 percent, while real consumption spending advanced 2 percent. As a consequence, the personal saving rate fell 0.9 percentage point during the last half of 1979 to a 28-year low of 4.7 percent in the fourth quarter. At the same time, consumer debt burdens remained high and delinquency rates on consumer loans continued to rise. It seemed clear that some significant retrenchment by the consumer was likely, even in the absence of further oil drag and continued policy restraint.

In light of these developments, it was expected that 1980 would be a year of declining economic activity. Indeed, 1 year ago this *Report* stated: "The expected recession is likely to be mild and brief. Declines in real gross national product (GNP) should not extend much past midyear, and economic growth will resume later this year, albeit slowly at first. Over the 4 quarters of 1980 real GNP is forecast to decline by 1 percent . . . the unemployment rate is likely to rise . . . to 7½ percent in the fourth quarter . . ." Despite the general accuracy of last year's forecast, views about the likely course of the economy went through several rapid changes as the year unfolded.

Early in 1980 there were few signs of recession. If anything, activity seemed to be picking up. The evidence available at the time hinted that households, far from retrenching, were on a buy-in-advance spending spree. Retail sales, which had risen at an annual rate of 13 percent from October 1979 to December 1979, accelerated to an annual rate of nearly 43 percent in January 1980. Auto sales, which had been running at an annual rate of 9.4 million units in October 1979, spurted to 10.3 million units in December 1979 and to 11.9 million units in January 1980.

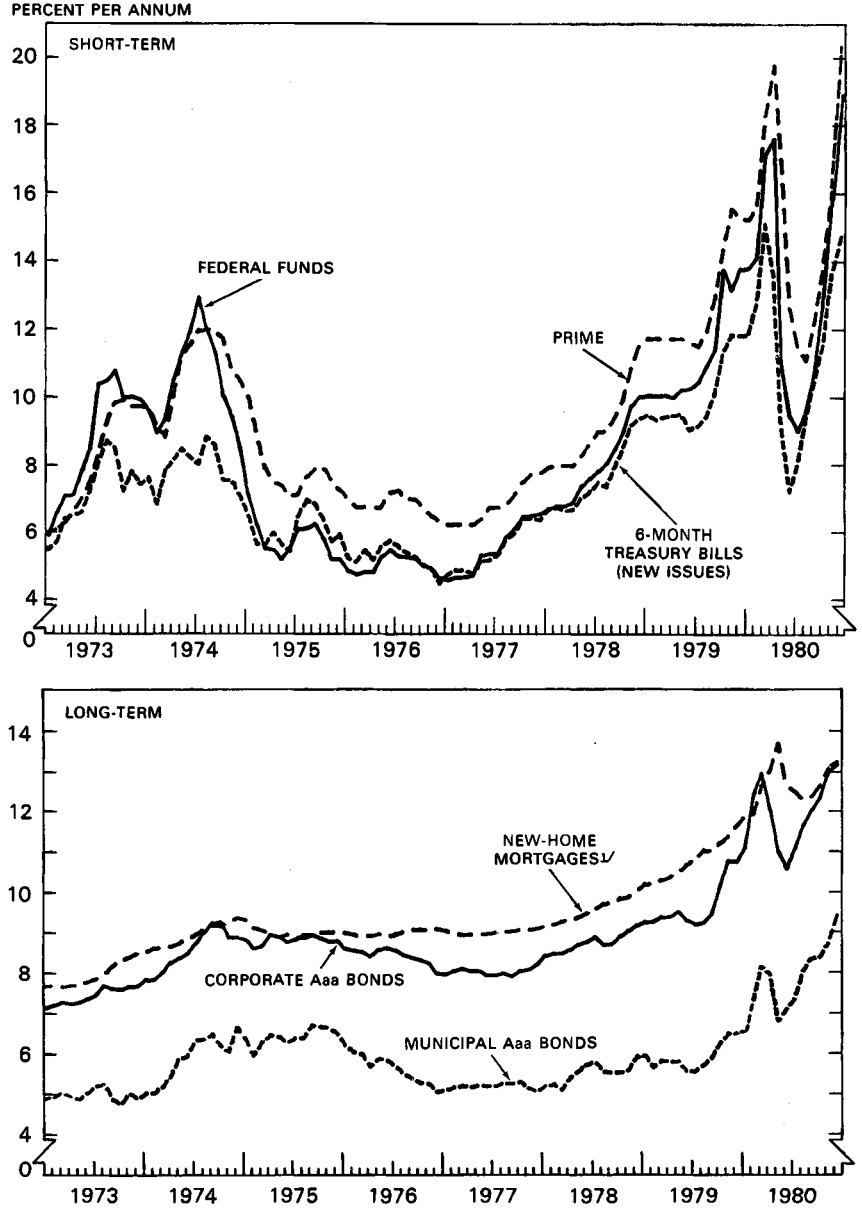
International events contributed to the sense that demand could be stronger than anticipated. Continued Mideast instability, the unresolved issue of the American hostages in Iran, and the Soviet invasion of Afghanistan all raised the possibility of greatly expanded defense spending, perhaps enough to sustain economic growth despite a predicted slowing in private demand.

The inflation data also seemed to reflect an apparent acceleration in economic activity. The CPI, which had increased at an annual rate of between 13 and 14 percent during the last 3 months of 1979, rose at a rate of 18 percent in January and February. Although a large part of this speedup was due to higher oil prices, other prices also accelerated. For the 3 months ending in February, the CPI excluding energy prices rose at an annual rate of 12.9 percent, in contrast to the 12.2 percent rate during the 3 months ending in November 1979. The producer price index (PPI) for finished goods other than energy rose at an annual rate of 16½ percent in January 1980. More ominously, wage rate increases, which had remained moderate throughout most of the year, accelerated in late 1979 and early 1980.

Meanwhile, business demand for credit accelerated, with business loans growing at a rapid 24 percent annual rate from December 1979 to February 1980. Speculative activity in commodity and financial futures markets intensified, and interest rates continued their rapid climb (Chart 7). In early March the 91-day Treasury bill rate rose to 15.7 percent while the prime rate hit 17.75 percent. Several forces were apparently at work. Each new increase in short-term interest rates brought fears of higher rates, and thus further pressures to borrow immediately. In addition, hints of credit controls apparently motivated firms to borrow in advance of actual need.

Chart 7

Selected Interest Rates and Bond Yields



1/ EFFECTIVE RATE ON CONVENTIONAL MORTGAGES IN THE PRIMARY MARKET.

SOURCES: DEPARTMENT OF THE TREASURY, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, FEDERAL HOME LOAN BANK BOARD, AND MOODY'S INVESTORS SERVICE.

By early March there was fear that inflationary pressures and inflationary expectations were mounting despite the restraining influences of fiscal and monetary policy, and that without some additional action these would validate and further accelerate wage demands and ultimately lead to an explosion of prices. This would have ended any chance of containing the 1979 oil-price shock. It was in this environment that the Administration and the Federal Reserve moved to suppress the speculative fever and return order to financial markets. On March 14 the President announced a series of budgetary and administrative actions designed to stabilize the situation. These included measures to reduce Federal expenditures, to strengthen wage and price monitoring, and to encourage energy conservation. In addition, the President authorized the Federal Reserve to institute a program of selective controls on credit.

The controls program—explained in more detail below—induced banks and other financial institutions to intensify actions to restrict the availability of virtually all types of credit. The growth of bank business loans and other lending covered by the program was curtailed sharply. The program also had the important psychological effect of curtailing household borrowing, as many forms of credit not explicitly covered by the program, such as home mortgages and auto loans, also fell sharply. A good part of these declines, however, probably stemmed from the rapid rise in interest rates.

Economic activity was apparently beginning to slow even before the imposition of the credit controls, but the subsequent decline in consumer demand was intensified by the controls. The economy reached its cyclical peak in January. Nevertheless, the first-quarter growth in real GNP was at an annual rate of 3.1 percent. During the second quarter real GNP dropped at an annual rate of 9.9 percent, exceeding the previous record of 8.2 percent set in the first quarter of 1975. Furthermore, the decline of 10.4 percent at an annual rate in real final sales was far and away the sharpest postwar drop in that category. Housing and automobile sales were the key sectors of weakness, accounting for about two-thirds of this drop in final demand. There was a modest amount of inventory accumulation but it was surprisingly small given such a large decline in final sales.

Interest rates, which had continued to rise for a brief time after the introduction of the credit controls program, fell sharply due to weakening loan demand and a declining economy. Rates peaked around the end of March and then fell further and more quickly than they

had risen just 2 months earlier. By late June the credit controls were no longer constraining the demand for credit, and by July the prime rate had fallen to 11 percent, down from its peak of 20 percent. In light of these developments, the controls were removed in early July.

After the second quarter's record drop in real GNP, most observers predicted that the economy would experience 2 more quarters of decline. There were fears that the downturn might approach the severity of the 1974–75 recession. Indeed, the unemployment rate, which had jumped to 7.6 percent in May, was forecast by many to be between 8½ and 9 percent by year-end.

In fact, private demand rebounded with surprising alacrity. The sharp decline in interest rates, combined with the absence of a significant stock of unwanted inventories, contributed to the brevity of the recession. The two sectors that had led the decline in the second quarter recovered quickly in the third. By September, housing starts had increased 70 percent above their May low—by far the quickest bounceback on record. Car sales also regained some of their lost ground. October sales ran at an annual rate of 9.2 million units, still lower than their year-earlier levels, but 28 percent above their May low rate of 7.2 million units. The third quarter rebound in real final sales was a strong 4.1 percent, but inventory liquidation held the growth in real GNP to a more modest 2.4 percent.

In the fourth quarter real growth picked up to a 3.7 percent annual pace, with continued strength evident in personal consumption and housing. With the turnabout in economic activity in the second half of the year, the labor market also improved.

At the same time that the recovery was taking place, tightening monetary conditions produced another upswing in the interest rate roller coaster (Chart 7). From July to December the prime rate advanced from 11 percent to a record level of 21½ percent, while the Treasury bill rate rose from 8 percent to 17 percent. Long-term interest rates also rose by about 2 to 3 percentage points over the same period. After mid-December interest rates dropped sharply for a time but nevertheless remained unusually high. These developments raise serious doubts about the future of the recovery and bring prospects of a leveling off or possibly a decline in output during the early part of 1981. Furthermore, the persistence of the Iran-Iraq war raises the possibility of sharply higher energy prices during 1981. At the end of 1980 the key features which had characterized the U.S. economy over most of the previous 18 months remain dominant: a surprising strength of demand straining against high interest rates, a stubborn inflation, and continued vulnerability to external oil shocks.

The decline of the economy during 1980 as a whole was dominated by drops in expenditures on real consumer durable goods (down 7.7 percent over the 4 quarters), residential structures (down 18.0 percent), and real business fixed investment (down 6.0 percent) (Table 14). The sectors of real demand that grew during the year were personal consumption of services, Federal Government purchases, and net exports. Service consumption grew 2.8 percent over the 4 quarters of 1980. Federal Government purchases were up 4.7 percent. Real net exports grew from $42.2 billion in the fourth quarter of 1979 to $55.7 billion in the fourth quarter of 1980. A 6.7 percent reduction in imports combined with a 3.9 percent rise in exports to produce this result.

TABLE 14.—*Growth in major components of real gross national product, 1976–80*

[Change, fourth quarter to fourth quarter]

Component	1976	1977	1978	1979	1980 [1]
Percent change:					
Real gross national product	4.4	5.8	5.3	1.7	−0.3
Personal consumption expenditures	5.7	5.0	4.8	2.0	−.3
Business fixed investment	7.8	13.5	9.0	2.9	−6.0
Residential fixed investment	19.8	12.5	−.0	−6.1	−17.6
Government purchases of goods and services	−1.3	3.6	1.6	1.9	1.5
Federal	−.8	5.0	−1.3	2.1	4.7
State and local	−1.7	2.7	3.3	1.7	−.3
Real domestic final sales [2]	4.9	5.9	4.4	1.7	−1.3
Change as a percent of GNP:					
Inventory accumulation	.4	.4	.2	−.8	.0
Net exports of goods and services	−.7	−.4	.9	.8	.9

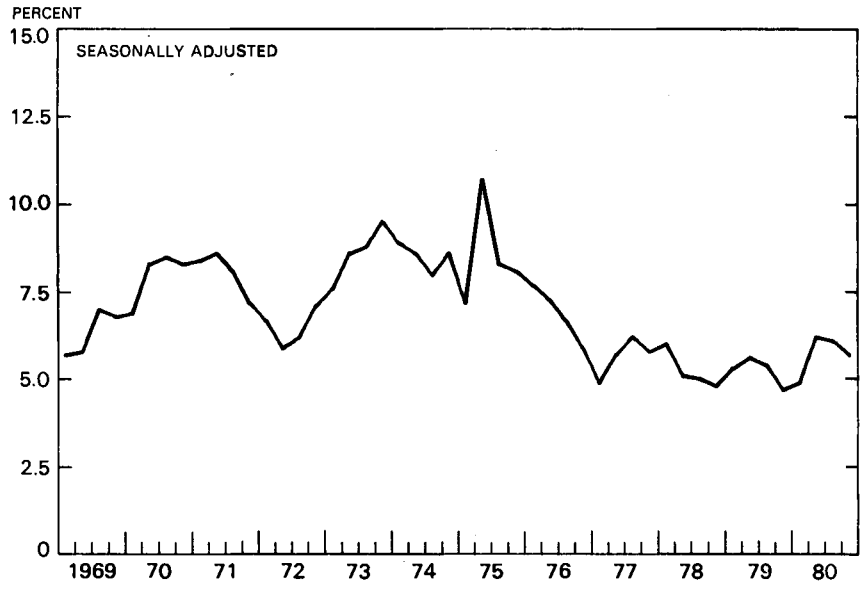
[1] Preliminary.
[2] GNP excluding change in business inventories and net exports of goods and services.
Source: Department of Commerce, Bureau of Economic Analysis.

Personal Consumption Expenditures

The year 1980 began with the personal saving rate at a 28-year low, with consumer debt burdens near record highs, and with attitude surveys showing consumer pessimism about the outlook. The modest strength in consumption that had been evident in 1979 despite the deceleration in real incomes had worsened the budget position of households. This, together with high interest rates and the imposition of credit controls, produced a retrenchment in consumer outlays. Real personal consumption expenditures fell in 1980 for the first time in 6 years. The 0.3 percent decline in consumption over the year, combined with the modest 0.5 percent increase in disposable income, helped to increase the saving rate from 4.7 percent in the fourth quarter of 1979 to 5.7 percent in the fourth quarter of 1980 (Chart 8).

Chart 8

Personal Saving Rate



SOURCE: DEPARTMENT OF COMMERCE.

The decline in consumption in 1980, which was largely the result of a decline in credit-sensitive purchases—particularly durable goods—was concentrated in the second quarter. In that quarter total real consumption fell at a record rate of 9.8 percent. The improvement in household debt positions that had begun in late 1979 was accelerated during the late spring and early summer by the credit controls program. Extensions of consumer credit in the second quarter fell at nearly a 60 percent annual rate. Outstanding consumer debt declined for 4 straight months from April to July, and for the second quarter as a whole it fell at a record 13.8 percent annual rate.

The rapid drop in interest rates helped to bring a quick reversal of the second quarter's consumption decline. In June real retail sales grew at a 17.8 percent annual rate; the gain in July was at an even greater 27.3 percent pace. For the third quarter as a whole real consumption advanced at an annual rate of 5.1 percent, regaining nearly one-half of the second quarter's drop. In the fourth quarter real consumption grew at a 3.3 percent annual rate.

Durable Goods. Real expenditures on consumer durables fell 7.7 percent during 1980, their second year of decline. The consumer durables cycle during 1979 and 1980 was much like that of the 1974–75 recession. During the first half of 1980 real consumer durable goods

expenditures continued the virtually unbroken decline that had begun after the fourth quarter of 1978. Over this period purchases of real consumer durables declined 16.3 percent, with the steepest drop concentrated in the second quarter of 1980. A long and gradual slide culminating in 1 quarter of very steep decline was also the pattern during 1974–75; the peak-to-trough decline then was also 16.3 percent. During the last half of 1980 real consumer durable expenditures regained nearly one-half of the second quarter's decline. Growth in the third quarter was at an annual rate of 21.9 percent. Growth in the fourth quarter was at a rate near 7 percent. Automotive purchases dominated quarter-to-quarter movements in consumer durables during the year, leading the first-half declines as well as the last-half gains. By year-end car sales were running at a 9-million unit rate, but sales were apparently being held back by a combination of the high interest rates on consumer loans and high car prices. Real automotive purchases fell 12.9 percent during 1980 as a whole. Similar weakness was evident in real consumer demand for other durable goods, which fell 4.0 percent over the 4 quarters of 1980.

Other Consumption. Real nondurable goods consumption fell 1.2 percent during 1980. Purchases of gasoline, oil, and other fuels fell 3.2 percent. In part this reflected the effects of the recession, but much of the decline in these energy demands was due to conservation efforts in response to sharply higher prices. By year-end the consumption of these goods was 11 percent below the peak levels set in 1978.

Real consumption of services grew at a sluggish 2.8 percent over the 4 quarters of 1980, down from the 1979 pace of 3.6 percent. Service consumption tends to be much more stable than goods consumption over the business cycle because many of these expenditures, such as housing and medical care, cannot be delayed or postponed. Nevertheless, important cyclically sensitive components of service consumption were quite weak during the year. Transportation services, for instance, fell at an annual rate of 11.9 percent in the second quarter and 2.0 percent over the entire year.

Residential Investment

The path of real investment in residential structures over the last 2 years was like that of consumer durables. It was marked by a slow and gradual slide throughout 1979, ending with a very sharp decline in the spring of 1980. Residential construction picked up rapidly thereafter, but at year-end housing starts had leveled off in response to higher mortgage interest rates. The pattern of housing activity in 1979 and 1980 reflected new developments in housing finance. As noted in Chapter 2, mortgage lenders now compete for loanable funds on a more even footing with other lenders. Consequently, the

chief cyclical determinant of housing activity has become interest rates rather than credit availability. As events have demonstrated, however, these institutional changes did not insulate housing from tighter monetary conditions.

The financial environment that determines the health of the housing sector had been weakened by the sharp rise in interest rates that began in 1979. By October of that year, most mortgage rates had risen to around 13 percent, a level that discouraged many potential home buyers. At the same time, increases in construction loan rates stretched the ability of homebuilders to finance new construction and carry inventories of unsold homes. This trend was accentuated in early 1980 by a further rise in interest rates on mortgage commitments to a record 16 percent in April. The increased interest rates pushed monthly mortgage payments higher than many could afford. In addition, even though mortgage finance was largely exempt from the provisions of the credit controls program, mortgage lenders were less willing to commit long-term funds in such an uncertain environment. During the year State and local government housing authorities continued to provide a substantial amount of mortgage support through purchase of residential mortgages at below-market interest rates financed by tax-exempt bonds. But Federal and related agencies provided only modest support to the mortgage market as compared with the last cyclical downturn. Home sales reached their nadir by late spring. Housing starts in May plummeted to a 906,000-unit annual rate, down 36 percent from their January level and down nearly 50 percent from their average 1979 level. During the second quarter single-family starts averaged 671,000 units at an annual rate, which was only slightly more than one-half 1979's total. Multifamily units fell to a rate of 382,000 units in the second quarter after averaging 551,000 units during 1979.

The midyear decline in mortgage interest rates lagged somewhat behind the drop in other long-term yields, but by August most mortgage rates had fallen to near 12 percent. Even with the high interest rates, however, sales of new homes had begun to increase in May, and construction activity followed quickly. Housing starts increased in June for the first time in 6 months. The surprisingly quick increase in starts probably stemmed from the relatively low level of new home inventories during the spring. With very few houses for sale, the increase in sales provided the needed stimulus for new building.

During the fall and early winter of 1980 mortgage rates again began to creep upward. Nonetheless, sales of new homes and total housing starts remained moderately strong through November. Although some weakening in sales was evident during the fourth quar-

ter, the low level of inventories encouraged a continuation of building activity.

The average price of a new home (adjusted for changes in quality) increased at an 11 percent annual rate in the first 3 quarters of 1980, which was about as fast as in the preceding year. Many of the homes built in 1980 were smaller and more austere than those constructed in preceding years, reflecting the recession weakness in incomes and the high cost of mortgage finance.

Business Fixed Investment

Real business fixed investment declined 6.0 percent over the 4 quarters of 1980. Business fixed investment averaged 10.7 percent of GNP, somewhat lower than the 11.0 percent level in 1979. Producers' durable equipment declined 4.8 percent during 1980. The volatile automotive portion of equipment purchases fell 16.2 percent during the year, its second year of very large declines. The remaining components declined 2.4 percent. Investment in nonresidential structures dropped 9.1 percent over the same period (Table 15).

TABLE 15.—*Changes in real business fixed investment, 1975–80*

[Percent change, fourth quarter to fourth quarter]

	1975	1976	1977	1978	1979	1980[1]
Nonresidential fixed investment	−7.4	7.8	13.5	9.0	2.9	−6.0
Structures	−5.6	2.6	4.8	11.8	9.5	−9.1
Producers' durable equipment	−8.0	10.2	17.4	7.7	.4	−4.8
Autos, trucks, and buses	2.0	17.2	23.9	9.8	−22.9	−16.2
Other	−10.4	8.5	15.7	7.2	7.4	−2.4

[1] Preliminary.

Source: Department of Commerce, Bureau of Economic Analysis.

Several factors contributed to the decline in business fixed investment. First, the deceleration in final sales reduced the need for immediate additions to capacity. The Federal Reserve Board's index of capacity utilization rates in manufacturing dropped from 83.9 percent in January to a 5-year low of 74.9 percent following the spring decline. The sizable drop in this aggregate index, however, masked some important differences among certain industries. In the durable goods materials industries, for instance, capacity utilization rates fell below 70 percent. Thus key suppliers of hard goods found themselves with plenty of capacity to satisfy demand over the near term. In addition, forecasts of recession indicated that capacity needs would not be rising until early 1981. These forecasts, in conjunction with the high cost of funds during the early part of 1980—widely perceived as temporary—made the delay of capital investment plans more attractive.

Finally, shrinking sales and increasing debt service costs seriously reduced corporate cash flow. Internally generated funds for invest-

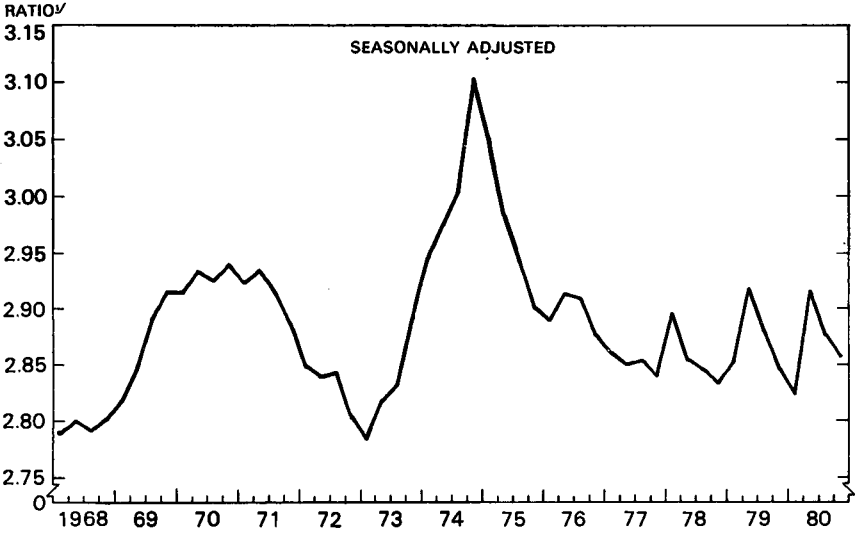
ment were sharply diminished by the 13.3 percent decline in profits during the second quarter of 1980. While aggregate measures of profitability and corporate cash flow reflected cyclical weakness, these measures understated the extent of the problem by masking important distributional imbalances. In particular, oil and coal industry profits represent a growing share of the aggregate. From the first quarter of 1979 to the third quarter of 1980 corporate profits in the petroleum and coal industries grew from $15.0 billion, or 6.9 percent of total corporate profits, to $22.2 billion, or 11.3 percent.

Inventory Accumulation

Cautious inventory policies continued throughout 1980. Real inventory accumulation in the fourth quarter was virtually unchanged from its level in the fourth quarter of 1979 and thus had almost no impact on the overall growth in real GNP over the 4 quarters of 1980.

Chart 9

Real Inventory–Final Sales Ratio, Nonfarm Business



1/RATIO OF REAL INVENTORIES AT END OF QUARTER TO REAL FINAL SALES AT MONTHLY RATES.

SOURCE: DEPARTMENT OF COMMERCE.

As compared with the 1970s, inventory-to-sales ratios remained relatively low during 1980 (Chart 9). What was more interesting was the rapid response of production to the changes in final sales. As

Table 16 shows, the pattern of output, sales, and inventories in the nonfarm business sector in 1980 was quite different from the pattern of the 1974–75 recession. A sharp drop in final sales in the fourth quarter of 1974 was accompanied by a smaller percentage reduction in output. This resulted in an unintended accumulation of inventories, with real inventory investment of $13.3 billion at an annual rate. The inventory-to-sales ratio rose markedly. This set off a sharp adjustment in subsequent quarters, and over the first half of 1975 inventories were decumulated at a $13.9 billion annual rate.

TABLE 16.—*Real output, sales, and inventories, nonfarm business sector, 1974–75 and 1980*

[Seasonally adjusted annual rates]

Item	1974		1975		1980			
	III	IV	I	II	I	II	III	IV[1]
	Percent change							
Output	−2.8	−5.9	−10.6	6.1	1.7	−10.8	3.1	4.9
Contribution of: [2]								
Final sales[3]	−.9	−8.0	.5	4.6	1.2	−11.4	4.3	3.3
Inventory accumulation	−1.9	2.2	−11.1	1.4	.4	.7	−1.2	1.6
	Billions of 1972 dollars							
Inventory accumulation	7.8	13.3	−15.6	−12.2	−1.4	.6	−3.1	1.6

[1] Preliminary.
[2] Change as percent of output.
[3] Includes a small amount of final sales by farms.

Source: Department of Commerce, Bureau of Economic Analysis.

This sharp inventory cycle was not in evidence in 1980. Final sales fell at an annual rate of 10.8 percent in the second quarter, the most rapid decline ever recorded. But the output response was nearly as rapid and inventories increased at an annual rate of only $0.6 billion. While inventories did decline in the third quarter of 1980, indicating efforts to trim unwanted inventories, the swing was distinctly more modest than in 1974–75.

Several factors account for the improved management of inventories. Inventory control and information systems continue to improve the ability of production managers to maintain the proper balance between raw material stocks and market demand. Also, unlike the earlier period, there were no serious doubts about the availability of raw materials and supplies this time around. Thus, precautionary overstocking of inventories to ensure adequate supplies of inputs for production was not apparent in 1979–80. In addition, high and volatile interest rates have increased both the cost and risk of holding large inventory stocks.

The External Sector

Following 2 years of rapid expansion, the growth in the volume of U.S. merchandise exports fell in 1980 as world economic activity slowed. At the same time, however, the volume of U.S. imports

dropped even faster, in large part because of the recession here. As a result, net exports measured in constant 1972 dollars showed a very large $13.5-billion increase during the year.

In value terms, shifts in the U.S. trade balance were importantly affected by payments for oil. From the third quarter of 1979 to the first quarter of 1980 the oil import bill increased by about $20 billion at an annual rate because of much higher oil prices. Other trade flows only partially offset this increase, and the merchandise trade deficit widened by $15 billion to an annual rate of $43 billion in the first quarter. After the first quarter, however, the volume of oil imports declined sharply. Thus, despite some further increases in oil prices, the oil bill fell, contributing to the marked narrowing of the trade deficit. The merchandise trade deficit for the whole of 1980 was an estimated $26 billion, $3.5 billion smaller than in 1979. Invisibles transactions, which reached a record surplus of $33 billion at an annual rate in the first quarter, more than offset the deficit on merchandise trade during 1980.

For 1979 the U.S. current-account deficit was a small $788 million. It was in deficit by about $10 billion at an annual rate in the first half of 1980, moved sharply into surplus in the third quarter, and is likely to show a surplus of $3–$6 billion for 1980 as a whole.

The most noteworthy feature of recent U.S. trade performance has been its strength. From 1977 to the second quarter of 1980 the volume of U.S. exports grew by 40 percent. More significantly, the share of U.S. exports as a percentage of the total exports of the industrial countries over this period increased by about 1¼ percentage points, reversing a declining trend visible since the 1950s. At the same time, the volume of U.S. imports showed almost no growth, even though real GNP rose by about 7 percent. This was a major break in longer-term trends, which have shown U.S. imports growing at rates well above the growth of real GNP.

These aggregate indicators of recent trade performance are all the more striking in view of the widespread popular notion that the United States is losing its ability to compete in both foreign and domestic markets. It may be that these views stem from unwarranted generalizations from particular sectors—such as automobiles, where foreign pressure clearly has increased—to aggregate trade. In addition, it may be that losses in relative terms vis-a-vis certain trading partners—most notably Japan and a certain number of newly industrializing developing countries—are viewed as more significant. Each of these concerns is certainly legitimate to some extent, but they should not obscure the overall success of the United States in foreign trade. Encouragement can be drawn from our recent aggregate performance, which most analysts ascribe to the increased competitive-

ness of U.S. producers in the wake of the depreciation of the dollar in 1977 and 1978.

Government Purchases of Goods and Services

Real government purchases of goods and services grew 1.5 percent during 1980, as gains in Federal purchases more than offset the decline in State and local purchases. Over the 4 quarters of 1980 State and local purchases fell 0.3 percent. Reduced purchases of durable goods (down 1.6 percent) and structures (down 6.5 percent) were the key factors. Real compensation of employees grew 0.7 percent in 1980, a significant deceleration from the 2.4 percent average rate in the previous 3 years. There had been widespread expectations that reductions in Federal grant-in-aid support, particularly for public service employment payrolls, combined with the recession squeeze on tax receipts and political pressures for reduced growth, would force an even sharper cutback in the growth of State and local payrolls. Instead, State and local governments have attempted to insulate payrolls from the worst of the budget pressures while cutting expenditures elsewhere. The decline in structures investment over the year was heavily concentrated in those areas dependent on the housing cycle: sewer system construction and highway and street construction and renovation.

Real Federal purchases of goods and services grew 4.7 percent during 1980. Real defense spending grew 5.7 percent during 1980, with the pace of spending picking up in the last half of the year. Real nondefense purchases grew at a slower 3.2 percent for the year as a whole.

LABOR MARKET DEVELOPMENTS

The volatility in demand for goods and services during 1980 produced similar swings in the demand for labor (Table 17). Civilian employment peaked at 97.8 million in February 1980. Then during the next 4 months employment fell sharply (1.1 percent) to 96.8 million in June. Over this same period unemployment rose from 6.5 million to 7.8 million. Automobile and construction employment were especially hard hit. Although these two industries constituted only about 6 percent of total payroll employment, they accounted for nearly two-fifths of the decline in employment from February to June.

Employment growth resumed at midyear. The magnitude of the subsequent recovery differs, depending on which of the two standard measures of employment is utilized. Judged by the household survey, employment growth after midyear was relatively modest so that by year-end total employment was still 500,000 lower than in December 1979. When measured by data from business payrolls, however, em-

ployment grew more vigorously after midyear and by December 1980 stood some 450,000 higher than a year earlier. Statistical discrepancies of this sort are not unusual for changes over short periods of time. Even with this difference, both measures clearly indicate that the decline in overall employment during 1980 ended quickly.

TABLE 17.—*Labor market developments, 1976–80*

Component	1976 IV	1977 IV	1978 IV	1979 IV	1980 IV
	Percent change from year earlier [1]				
Increase in civilian employment, total	3.4	4.4	3.6	2.1	−0.3
Males 20 years and over	2.6	3.3	2.5	1.3	−.7
Females 20 years and over	4.6	5.2	5.4	3.9	1.5
Both sexes 16–19 years	3.0	8.0	2.6	−.9	−6.7
White	3.3	4.3	3.2	2.0	−.2
Black and other	4.2	4.7	7.0	2.9	−.9
	Percent [2]				
Unemployment rate, total [3]	7.8	6.6	5.9	5.9	7.5
Males 20 years and over	6.0	4.8	4.1	4.4	6.3
Females 20 years and over	7.4	6.7	5.7	5.7	6.7
Both sexes 16–19 years	19.1	16.6	16.3	16.2	18.3
White	7.0	5.7	5.1	5.2	6.6
Black and other	13.3	13.3	11.5	11.3	14.1
Participation rate, total [4]	61.8	62.6	63.5	63.8	63.7
Males 20 years and over	79.9	79.9	79.8	79.6	79.2
Females 20 years and over	47.4	48.6	50.1	51.0	51.4
Both sexes 16–19 years	54.4	56.8	58.4	58.1	56.4
White	62.1	62.9	63.7	64.1	64.1
Black and other	59.6	60.6	61.8	61.7	61.2

[1] Changes for 1978 IV adjusted for the increase of about 250,000 in employment and labor force in January 1978 resulting from changes in the sample and estimation procedures introduced into the household survey.
[2] Seasonally adjusted.
[3] Unemployment as percent of civilian labor force.
[4] Civilian labor force as percent of civilian noninstitutional population.

Source: Department of Labor, Bureau of Labor Statistics.

The impact of the year's labor-market weakness was spread unevenly across demographic groups. The unemployment rate for adult men rose by a much greater percentage than did the unemployment rates for women and teenagers. The total unemployment rate rose from 5.9 percent in the fourth quarter of 1979 to 7.5 percent in the fourth quarter of 1980. The unemployment rate for men 20 years and over rose from 4.4 percent to 6.3 percent during this period. By contrast, the unemployment rate for women 20 years and over only increased from 5.7 to 6.7 percent. In the third quarter of 1980 the adult male unemployment rate exceeded the adult female rate. While this is highly unusual, adult male unemployment rates typically rise more than adult female rates during recession. This is because output declines tend to be concentrated in construction and durable goods manufacturing, sectors with a much higher proportion of adult male workers than, say, the relatively stable service sector. In the fourth quarter employment recalls in such industries as autos, steel,

and construction helped to reduce the adult male unemployment rate below that of adult females.

Unemployment duration lengthened significantly in 1980. In the last quarter of 1979, before the recession began, 48 percent of the unemployed had been looking for work for less than 5 weeks, and only 8.5 percent, or 524,000 people, had been without jobs for 27 weeks or more. By the last quarter of 1980 about 1.1 million people, or 14 percent of the unemployed, had been looking for work for 27 weeks or more. Many of these workers were eligible for up to 39 weeks of unemployment compensation, with additional benefits if their job loss was due to foreign competition or if their firms or unions provided supplemental unemployment benefits.

During the 4 years of economic expansion from 1976 to 1979 the civilian labor force grew at an average annual rate of 2.8 percent. The rise in unemployment during 1980 dampened this growth to 1.3 percent. After increasing by about 1 percentage point per year during the last half of the 1970s, the female labor force participation rate grew by about one-half, rising to 51.6 percent in 1980. The male labor force participation rate of 77.4 percent was down slightly over the year.

PRICE DEVELOPMENTS

Inflation dominated the economic news in 1980 as it did in 1979. The implicit price deflator for GNP rose 10.0 percent over the 4 quarters of 1980, substantially faster than the 8.1 percent rate of increase in the deflator during 1979 (Table 18). The producer price index for finished goods increased 11.7 percent from December 1979 to December 1980, following a 12.6 percent rise during the preceding 12 months. For the 12 months ending in November 1980, the CPI increased 12.6 percent, the same as over the corresponding period in 1979. These measures all reflected energy price surges early in the year and farm price increases late in the year. The most disappointing news, however, was the acceleration in various price measures which exclude the direct effects of such special factors as energy and food. As explained in Chapter 1, such measures are often used as a proxy for the "underlying" rate of inflation. After remaining surprisingly stable during most of 1979 in the face of very large oil-price increases, these measures showed significant increases in 1980.

The spring decline in aggregate demand brought rapid changes in the prices of certain sensitive industrial commodities. Sharp decreases were registered by producer prices of nonferrous metals as well as lumber and wood products. These price reductions had an important—if temporary—moderating influence on producer price measures. Excluding food and energy, producer prices of crude ma-

terials fell for a full third of the year. One other measure, the Bureau of Labor Statistics measure of spot market prices, fell 11.5 percent from February 1980 to June 1980. The turnaround in activity in the second half-year once again tightened industrial markets by enough to erase the early-year declines. Producer prices for crude materials excluding food and energy rose 10.6 percent in the 12 months ending in December 1980.

TABLE 18.—*Measures of price change, 1976–80*

[Percent change, fourth quarter to fourth quarter]

Item	1976	1977	1978	1979	1980 [1]
Implicit price deflators [2]					
Gross national product	4.7	6.1	8.5	8.1	10.0
Personal consumption expenditures	5.0	5.9	7.8	9.5	10.4
Private nonfarm business output	4.9	5.7	8.3	8.3	10.3
Consumer prices, total	5.0	6.6	9.0	12.7	[3] 12.6
Farm value of food	−12.9	6.4	17.5	7.4	[3] 14.5
Energy [4]	6.2	8.2	7.5	36.5	[3] 18.9
Home purchase and finance [5]	3.8	8.9	13.4	19.8	[3] 17.7
All other	6.3	6.1	7.3	7.9	[3] 9.8
Producer prices of finished goods, total	2.7	6.9	8.7	12.6	12.0
Food	−4.4	7.4	11.6	7.8	7.4
Energy	5.0	9.2	6.4	62.0	28.4
All other	5.6	6.4	7.9	9.3	11.1

[1] Preliminary.
[2] Seasonally adjusted data.
[3] November 1979 to November 1980.
[4] Includes only prices for direct consumer purchases of energy for the home and for motor vehicles.
[5] In both the table and the text, "home purchase and finance" consists of home purchase and financing, taxes, and insurance on owner-occupied homes.

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

Consumer Prices

As in 1979, the behavior of energy and food prices, together with the effects of mortgage interest rates on the CPI, attracted attention throughout the year. These are discussed in more detail below. Less marked by the public, but of more concern for the longer-run outlook, was the increase in the underlying rate of inflation as evidenced in the behavior of consumer prices after these special factors are excluded.

The underlying rate, as approximated by the CPI excluding food, energy, and home purchase and finance, jumped from 7.2 percent in the 12 months ending November 1979 to over 11 percent in December, and it stayed in the neighborhood of 12 percent during the first quarter of 1980. From April to November the measure grew at an average annual rate of 9.0 percent, a slowdown from the pace in the first quarter, but noticeably above the 1979 performance.

A second measure of the underlying inflation rate is the fixed-weight price index for personal consumption expenditures excluding energy and food. This measure, shown in Table 19 along with the

previously discussed CPI measures, reflects a similar acceleration over the year as a whole. Over the 4 quarters of 1980 the index rose 9.6 percent, up from the 7.2 percent increase over the 4 quarters of 1979.

TABLE 19.—*Alternative measures of consumer price changes, 1980*

[Percent change; seasonally adjusted annual rates]

Item	1979	1980			
	IV	I	II	III	IV [1]
Consumer prices, total	13.7	16.9	13.6	7.2	12.1
Food	10.2	5.9	6.5	13.3	15.3
Energy [2]	25.6	53.3	22.5	3.8	1.0
Home purchase and finance [3]	26.7	25.9	27.4	.1	20.5
Other	7.6	11.3	9.3	8.7	9.9
Personal consumption expenditures deflators:					
Implicit deflator, total	10.7	12.0	9.8	8.8	10.9
Fixed-weight price index, total	11.3	12.8	9.8	9.6	11.0
Food	9.9	3.4	5.7	16.9	16.2
Energy [4]	31.2	53.4	20.5	2.1	6.5
Other	9.0	10.3	9.3	8.7	10.1

[1] Preliminary; changes for consumer prices based on data through November.
[2] Includes only prices for direct consumer purchases of energy for the home and for motor vehicles.
[3] In both the table and the text, "home purchase and finance" consists of home purchase and financing, taxes, and insurance on owner-occupied homes.
[4] Gasoline and oil, fuel oil and coal, and electricity and gas.

Note.—Fixed-weight price indexes are preliminary and subject to revision.

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

It is difficult to ascribe the acceleration of these measures at the beginning of 1980 to any single factor. It is likely that the most important cause was the pass-through of oil-price increases into other commodities. About half of all oil is used in the production and distribution of other goods and services. Oil-price increases therefore must eventually be reflected in final product prices. Similarly, as described below, the rapid advance in unit labor costs during 1979 and 1980 exerted further upward pressures on prices. Finally, the latter part of 1979 and the early months of 1980 saw an upsurge in expectations about inflation and an upsurge in consumer buying. In such an atmosphere business may well have raised prices ahead of increases in costs. The relative improvement in the underlying rate following the spring's decline in demand offers some support for this view.

Prices of Energy, Food, and Housing

The measures of the underlying rate of inflation omit the primary sources of month-to-month variability in consumer prices. In particular, half of the CPI is accounted for by energy, food, and home purchase and finance. And 1980 saw very volatile movements in these prices.

Energy. Energy prices as measured by the CPI, which had climbed at a 55 percent rate in the 6 months between March and September

1979, slowed to a 19 percent annual rate in the last months of that year. During the fall of 1979 the Organization of Petroleum Exporting Countries (OPEC) announced an increase in the price of Saudi Arabian light crude oil of $6.00 per barrel. That was followed by a series of $2.00 per barrel increases in January, April, and August. These price increases were accompanied by the phased decontrol of domestic crude oil prices, which had begun in June 1979. The effect of these actions was a burst of price increases for oil products during the first 3 months of 1980, averaging an annual rate of almost 100 percent. Gasoline, for instance, which was priced at $1.04 per gallon in December, moved up to $1.23 per gallon in March. Similar increases were registered in other oil-related energy components of the CPI, in particular home heating oil.

By the second quarter the burst of OPEC-related energy price increases began to play itself out. In the 5 months between May and October 1980 the energy component of the CPI grew at an average annual rate of just 1.7 percent. This was in quite marked contrast to the 40.4 percent average annual rate of increase experienced over the prior 5 months. By November gasoline was actually 0.8 cents per gallon lower than it had been in March, and heating oil was up only 1.9 cents during the same period. Thus, although the energy sector spent the year in the limelight, it was a major *direct* source of inflation only in the first quarter of the year.

Food. Food prices in the CPI increased 10.6 percent in the 12 months ending November 1980, as compared with a 9.8 percent rise over the previous 12 months. The farm value of food increased nearly 15 percent over the period. Marketing costs increased about 9 percent.

Over the course of 1980 the food price situation was quite volatile. During the first half, food prices increased less than 5 percent at an annual rate. During the second half, however, the rate of increase more than doubled. Recession-induced weakness in demand during the spring, followed by drought during the summer growing season, contributed to the acceleration in monthly food price movements. Prices of retail meat, which accounts for nearly 30 percent of all food spending at home, actually fell at an annual rate of 11.8 percent during the first half, and rose at a rate of 35 percent from June to November.

The extended period of very hot and dry weather damaged crops in the Southwest (cotton, soybeans, sorghum, and peanuts) during the early summer. The adverse weather conditions persisted and moved north and east affecting the corn crop and meat production in July and August. As the summer progressed the full extent of the

crop damage became evident. Prices received for the major crops increased 20 to 30 percent during the second half of 1980.

Housing. The home purchase, finance, insurance, and taxes component of the CPI is a matter of controversy. Ideally, a cost-of-living index should reflect the cost of shelter services provided by owner-occupied houses. For rented houses, this is precisely what is captured by market rents. Under current practice, however, the home purchase and finance component of the CPI in effect treats the purchase of a house as it would any ordinary good. But houses do not only provide shelter; they are also assets which yield a return. As a consequence, the movement of house prices reflects not only the cost of shelter but also the value of the investment. Since the CPI also assumes that part of the mortgage used to finance a house is "purchased," the confounding of consumption and investment considerations is exacerbated by the treatment of mortgage interest costs. The Bureau of Labor Statistics (BLS) has been concerned for some time with the adequacy of the homeownership component of the CPI. BLS, in fact, currently publishes several experimental indexes based on alternative treatments of homeownership.

For the present, at least, the CPI tends to overstate the importance of home purchase and finance and, given the volatility of mortgage rates, to produce startling monthly variations in the CPI. During the first 6 months of 1980 the home purchase and finance component of the CPI increased at a 27.6 percent rate, adding about 3 percentage points to the annual rate of inflation over the period. In July and August the fall in mortgage rates dominated the index. The home purchase and finance component fell at an annual rate of over 25 percent in July, and this decline was large enough to offset the increase in the other components of the index, resulting in an unchanged CPI from June to July. While this zero change in prices was widely regarded as a statistical anomaly, it was no more or less anomalous than the inflationary influence that the home purchase and finance component had imparted to the CPI throughout the first half of the year. This influence began to be felt again during the late fall and early winter as mortgage rates climbed to near their spring peaks. The home purchase and finance component promises to have a heavy impact on the CPI in the early months of 1981.

WAGES, PRODUCTIVITY, AND INCOME SHARES

As discussed in Chapter 1, the primary goal of anti-inflation policy during 1980 was to prevent the increase in oil prices from becoming a stimulus to higher wage settlements. The policy was motivated by the facts that the long-term behavior of prices of goods and services closely reflects the behavior of business costs and that wages, salaries, and fringe benefits account for roughly two-thirds of the total

costs of production. The evidence suggests that while the policy was partially successful, it was not able to prevent an acceleration of wages. As shown in Table 20, all measures of labor compensation accelerated between 1979 and 1980 to a level of about 9 or 10 percent. The largest wage gains were in manufacturing, where average hourly earnings grew 10.8 percent over the 12 months ending in December 1980. The smallest gains were in the construction industry (7.2 percent over the same period).

TABLE 20.—*Measures of compensation and employment costs, 1977–80*

[Percent change, third quarter to third quarter]

Measure	1977	1978	1979	1980
Average hourly earnings index	7.4	8.3	8.0	9.2
Compensation per hour [1]	7.5	8.6	9.6	10.0
Employment cost index [2]	7.2	8.0	7.7	9.4
Union	7.7	7.9	8.4	10.9
Nonunion	6.9	8.0	7.3	8.6
Union wage changes (total effective adjustment)	8.6	7.9	8.7	9.1
Adjustment resulting from:				
Current settlement	3.5	2.1	2.8	3.4
Prior settlement	3.3	3.5	3.1	3.2
Escalator provision	1.7	2.2	2.8	2.5

[1] Data are for private nonfarm business sector, all persons.
[2] Changes are from September to September.

Source: Department of Labor, Bureau of Labor Statistics.

Although acceleration in wages, salaries, and fringe benefits seems to have taken place in both union and nonunion sectors, union wage gains continued to exceed nonunion wage gains. Uncertainty exists as to whether or not these results reflect the relative bargaining strength of union over nonunion workers, as well as the extent to which they mirror conditions specific to individual industries. These differentials may also result from the more prevalent use of cost-of-living adjustments (COLAs) in union contracts. To the extent that inflation is unanticipated, workers under contracts with COLAs will tend to receive larger wage settlements than those without COLAs. For this reason, sudden increases in inflation rates may tend to widen union-nonunion wage differentials. Finally, the 1980 wage differentials may result from the fact that a number of important unions were able to maintain wage gains even though aggregate labor markets were slack. Major contracts were settled in 1980 in the aerospace, steel, telephone, and clothing and apparel industries.

Despite the step-up in nominal wage increases, real wages continued to fall throughout 1980. However, as was pointed out in last year's *Report,* customary calculations of the real wage which use the CPI can be deceptive. Table 21 sets forth several calculations of real wage change utilizing alternative price indexes.

The additional cost of imported energy was a major factor in real wage declines in 1980, as it was in 1979. Increases in the price of

imported energy eventually will reduce real incomes in the United States. This reduction must be achieved by some combination of price inflation, wage moderation, or shrinking profit shares. Wage bargaining aimed at preventing this can only transform the adjustment into a more inflationary one.

TABLE 21.—*Alternative measures of changes in real earnings per hour, 1978–80*

[Percent change, fourth quarter to fourth quarter]

Item	1978	1979	1980 [1]
Average hourly earnings index			
Deflated by:			
Consumer price index (CPI)	−0.5	−4.3	−2.6
CPI with rent substituted for home-ownership	.6	−2.3	−1.1
CPI with rent substitution and excluding energy	.6	.1	−.2
Fixed-weight price index for personal consumption expenditures (PCE)	.2	−1.9	−1.1
Fixed-weight price index for PCE excluding energy	.2	.4	−.2
Compensation per hour [2]			
Deflated by:			
Consumer price index (CPI)	.1	−2.7	−2.5
CPI with rent substituted for home-ownership	1.2	−.9	−.8
CPI with rent substitution and excluding energy	1.2	1.6	.9
Fixed-weight price index for PCE	.8	−.5	−.8
Fixed-weight price index for PCE excluding energy	.8	1.9	.8

[1] Preliminary; CPI for fourth quarter 1980 based on data through November.
[2] Data are for the private nonfarm business sector, all persons. Changes for 1980 are third quarter to third quarter.

Note.—CPI for all urban consumers used.

Fixed-weight price indexes are preliminary and subject to revision.

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

Incomes policies can help to moderate the inflationary response to an oil-price increase, but only if business and labor cooperate to achieve the necessary adjustment. Such a willingness supported the Council on Wage and Price Stability (CWPS) standards program through its first year, 1979. In that year, as was noted in the last *Report*, evidence suggested that the standards had helped to restrain wage inflation by 1 to 1½ percentage points. Since there was no evidence of widening profit margins, it appears that the CWPS program contributed to smoothing the adjustment to higher oil prices. While there is evidence that cooperation with the standards was also high in its second year, a combination of several program features seems to have reduced but not eliminated its impact. A widening of the allowable range of wage increase and an undervaluation of cost-of-living adjustments in multiyear contracts were important factors.

Productivity

Productivity growth continued weak in 1980, advancing a tiny 0.1 percent over the year ending with the third quarter. In 1979 private nonfarm business productivity had declined 1.1 percent.

During the course of 1980 productivity growth fluctuated sharply. In the first quarter productivity was essentially unchanged. With the

sharp decline in output in the second quarter, productivity declined at a rapid 3 percent annual rate. This marked the seventh consecutive quarterly drop. With the resumption of modest economic growth in the third quarter, productivity rebounded sharply, rising at a 4 percent rate.

The faltering productivity during the first half of 1980, combined with a more rapid rise in wages, resulted in an acceleration in unit labor costs. However, with the improvement in productivity in the third quarter, the increase in unit labor costs moderated substantially. For the year ending with the third quarter, unit labor costs rose 10 percent, a modest improvement from the increase recorded during 1979.

Distribution of National Income

The recession's impact was evident in the shifting distribution of national income during 1980 (Table 22). Compensation of employees, which had averaged 74.6 percent of national income over the years 1976–79, rose to 75.3 percent in 1980. This increase in the share of national income going to wage earners is the normal pattern in a recession. Employer contributions for social insurance continued to account for a growing share of the compensation total. Corporate profits and proprietors' income as a share of national income fell sharply to 14.8 percent in 1980, down from the 17.1 percent average share during 1976–79. The corporate profits share fell to 8.6 percent. The unusually high level of interest rates was responsible for boosting the net interest share of national income to 8.5 percent, its highest level in the postwar period. Net farm income fell in 1980 from its relatively high level in 1979. After adjusting for changes in inventory, net income from farming was about $24 billion for the

TABLE 22.—*Shares of national income, 1976–80*

[Percent of total]

Item	1976	1977	1978	1979	1980[1]	Third quarter	
						1979	1980
Compensation of employees	75.1	74.5	74.5	74.4	75.3	74.3	75.3
Wages, salaries, fringe benefits, and other	70.0	69.4	69.2	69.0	69.8	68.9	69.8
Employer contributions for social insurance	5.1	5.1	5.3	5.4	5.5	5.4	5.5
Proprietors' income[2]	6.8	6.7	6.7	6.7	6.2	6.7	6.1
Nonfarm[2]	5.4	5.5	5.2	5.1	5.1	5.2	5.1
Farm[2]	1.4	1.2	1.5	1.6	1.1	1.5	1.0
Rental income[3]	1.7	1.6	1.6	1.6	1.5	1.5	1.5
Corporate profits[2]	10.0	10.7	10.6	10.0	8.6	10.0	8.4
Net interest	6.3	6.5	6.6	7.3	8.5	7.4	8.7

[1] Preliminary.
[2] With inventory valuation and capital consumption adjustments.
[3] Rental income of persons, with capital consumption adjustment.

Note.—Quarterly figures based on seasonally adjusted data.
Detail may not add to 100 percent because of rounding.

Source: Department of Commerce, Bureau of Economic Analysis.

year, 23 percent lower than in 1979. Net cash income, the cash available to farmers for capital expenditures and operator income, was less affected and fell about 6 percent. The deceleration in cash receipts for livestock and continued inflation in farm production expenses were the principal factors in the decline.

ECONOMIC POLICY

As in 1979, economic policy in 1980 aimed at stemming an acceleration in prices and wages. Both fiscal and monetary policy sought to restrain aggregate demand. As noted above, these policies were supplemented by a program of voluntary standards for wage and price behavior.

Fiscal Policy

Changes in the high-employment surplus (HES) are a useful measure of discretionary fiscal policy. The actual Federal budget deficit is affected not only by changes in discretionary policy, such as changes in tax rates or more rapid spending on defense programs, but also by the state of the economy. In particular, cyclical swings in incomes and employment affect tax receipts. Outlays for such programs as unemployment compensation and food stamps are similarly affected. These changes in receipts and outlays alter the budget deficit without any action by the Congress or the President. Thus, the actual surplus or deficit is a poor measure of discretionary fiscal policy. The HES measures what the surplus would be if the economy were at high employment. By evaluating the budget at a standard level of GNP, the measure abstracts from those changes in budget receipts and outlays that result from cyclical changes in GNP.

The High-Employment Budget. When judged by this measure, discretionary fiscal policy remained tight in 1979. The high-employment surplus increased $13.5 billion in 1979 (Table 23). The chief factors in the tightening were the sluggish pace of outlay growth during 1979 (particularly for grants-in-aid), the inflation-induced increases in personal income taxes, and legislated increases in social insurance taxes. Over the 4 quarters of 1980, however, the HES fell by $6.8 billion. Two unusual factors were responsible for the apparent move toward expansion during 1980. First, the delayed effect on individual tax refunds and final settlements from the Revenue Act of 1978 lowered the HES by roughly $8 billion, starting in the first quarter of 1980. Second, due to large increases in interest outlays caused by

record high interest rates during the year, *discretionary* outlay changes appear larger than they actually were. By convention, interest payments are unadjusted in the calculation of high-employment outlays. In other words, high-employment interest payments are defined to be equal to actual interest payments. Thus, the high-employment surplus tends to understate the degree of discretionary fiscal restraint when interest rates increase, and vice-versa. Excluding these two factors, the high-employment budget surplus actually tightened by roughly $10 billion over the 4 quarters of 1980.

TABLE 23.—*Actual and high-employment Federal receipts and expenditures, national income and product accounts, calendar years 1973–80*

[Amounts in billions of dollars; quarterly data at seasonally adjusted annual rates]

Calendar year or quarter	Actual				High-employment [1]			
	Receipts	Expenditures	Surplus or deficit (−)		Receipts	Expenditures	Surplus or deficit (−)	
			Amount	Percent of GNP			Amount	Percent of GNP [2]
1973	258.6	264.2	−5.6	−0.4	252.7	264.0	−11.3	−0.9
1974	287.8	299.3	−11.5	−.8	296.9	297.6	−.7	−.1
1975	287.3	356.6	−69.3	−4.5	315.8	344.9	−29.1	−2.2
1976	331.8	384.8	−53.1	−3.1	354.7	374.8	−20.1	−1.5
1977	375.1	421.5	−46.4	−2.4	390.7	413.8	−23.1	−1.6
1978	431.5	460.7	−29.2	−1.4	441.1	456.8	−15.7	−1.1
1979	494.4	509.2	−14.8	−.6	504.2	506.5	−2.2	−.1
1980 [3]	538.9	601.2	−62.3	−2.4	573.2	591.6	−18.3	−1.2
1979:								
I	477.0	488.4	−11.5	−.5	481.0	485.9	−4.8	−.3
II	485.9	494.0	−8.1	−.3	496.8	491.4	5.3	.4
III	500.6	515.8	−15.2	−.6	510.9	513.0	−2.1	−.1
IV	514.0	538.6	−24.5	−1.0	528.3	535.5	−7.2	−.5
1980:								
I	528.4	564.7	−36.3	−1.4	543.2	560.6	−17.4	−1.1
II	520.9	587.3	−66.5	−2.6	556.6	577.9	−21.3	−1.4
III	540.8	615.0	−74.2	−2.8	581.8	602.5	−20.7	−1.3
IV [3]	565.4	637.9	−72.5	−2.6	611.2	625.3	−14.0	−.9

[1] These totals differ from those published in the November 1980 Survey of Current Business because of revisions to both actual and potential GNP. For more information on these revisions, see the supplement to this chapter.
[2] High-employment surplus or deficit as percent of high-employment gross national product.
[3] Preliminary.

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

Sources: Department of Commerce (Bureau of Economic Analysis), Office of Management and Budget, and Council of Economic Advisers.

Budget Outlays and Receipts. Federal budget outlays for fiscal 1980 were $579 billion, an increase of $85 billion, or 17 percent over the fiscal 1979 level. This marked acceleration in budget outlays was due largely to the combined impact of higher interest rates, growing unemployment, and increases in the cost of entitlement programs due to cost-of-living increases. Interest outlays jumped 23 percent in fiscal 1980, while outlays for income security and health, which include social security, unemployment insurance, and other major Federal entitlement programs, grew 19 percent. Together these three areas—health, income security, and interest—accounted for 61 percent of the change. In addition, defense outlays grew 17 percent in

fiscal 1980, up sharply from the 10 percent growth of the prior fiscal year.

Federal budget receipts rose by 12 percent compared to 16 percent during fiscal 1979. The recession-induced weakness in incomes and the delayed impact of the Revenue Act of 1978 on individual tax refunds and final settlements combined to produce this result. Individual tax receipts grew 12 percent in fiscal 1980, down sharply from the 20 percent fiscal 1979 gain. Corporate tax receipts fell 2 percent in fiscal 1980. The Federal budget deficit increased from $28 billion in fiscal 1979 to $59 billion in fiscal 1980.

Monetary Policy and Financial Markets

As discussed in Chapter 1, the Federal Reserve adopted a new procedure in October 1979 to guide its daily open market operations. Under the new procedure, designed to exert better control over the growth of the monetary aggregates, the Federal funds rate is allowed to vary over a much wider range. In a report submitted to the Congress in February 1980, the Federal Reserve set forth its objectives regarding increases in the money and credit aggregates during 1980 (Table 24). These ranges called for a deceleration in monetary expansion in 1980 from the preceding year.

TABLE 24.—*Growth in monetary and bank credit aggregates, 1979–81*

[Percent change]

Item	Actual		Federal Reserve longer-run ranges		
				1980 IV to 1981 IV	
	1978 IV to 1979 IV	1979 IV to 1980 IV [1]	1979 IV to 1980 IV	Unadjusted for nationwide NOWs	Adjusted for nationwide NOWs
M–1A	5.0	5.1	3½ to 6	3 to 5½	0 to 2½
M–1B	7.6	7.1	4 to 6½	3½ to 6	5 to 7½
M–2	8.9	9.6	6 to 9	5½ to 8½	5½ to 8½
M–3	9.8	9.7	6½ to 9½	6½ to 9½	6½ to 9½
Bank credit	11.5	[2] 7.8	6 to 9	6 to 9	6 to 9

[1] Preliminary.
[2] Estimate for fourth quarter 1980 based on November data.

Note.—M–1A is currency plus private demand deposits, net of deposits due to foreign commercial banks and official institutions.
M–1B is M–1A plus other checkable deposits (negotiable order of withdrawal accounts, accounts subject to automatic transfer service, credit union share draft balances, and demand deposits at mutual savings banks).
M–2 is M–1B plus overnight repurchase agreements (RPs) issued by commercial banks, overnight Eurodollar deposits held by U.S. nonbank residents at Caribbean branches of U.S. banks, money market mutual fund shares, and savings and small time deposits at all depository institutions.
M–3 is M–2 plus large time deposits at all depository institutions and term RPs issued by commercial banks and savings and loan associations.
Bank credit is total loans and investments plus loans sold at all commercial banks.

Source: Board of Governors of the Federal Reserve System.

Except for M–1B, the rates of growth of the various monetary aggregates during the year roughly matched or exceeded their 1979 pace. Some of the relative movements in the various monetary aggregates in 1980 were the result of special factors. At the beginning of the year the Federal Reserve had anticipated that funds attracted to

automatic transfer services (ATS) nationwide and negotiable order of withdrawal (NOW) accounts in the Northeast would cause M-1A to grow about one-half percentage point slower than M-1B. In fact, more funds flowed into these accounts from both regular savings accounts and demand deposits than was originally forecast. These developments boosted M-1B growth and lowered M-1A growth, each by about three-quarters of a percent relative to what they otherwise would have been.

For the year as a whole M-1B, M-2, and M-3 exceeded their target ranges while M-1A did fall within its range. However, if one adjusts the target ranges for M-1A and M-1B in light of the actual experience with NOW and ATS accounts, then both of these measures fall roughly at the upper end of the adjusted range.

Within the year, money growth, credit flows, and interest rates experienced unusually wide variations. The year began with money and credit demands apparently accelerating despite the sharp increase in interest rates in the fourth quarter of 1979. In February the growth of money and credit surged, boosting demand for reserves above the level consistent with the Federal Reserve's monetary growth ranges. The resulting pressures in money markets, combined with deteriorating inflationary expectations, forced both short- and long-term rates up sharply.

Data available in early March suggested that credit growth had not been deterred by the general monetary tightening and the sharp increases in interest rates. Moreover, the increasing speculative activity in financial and commodities markets raised concern among many in the financial community about the threat of a financial panic. Extraordinary measures were called for to dampen excessive credit demands, reduce the spiraling inflationary expectations, and ease the strains in financial markets.

On March 14 the President announced an extensive anti-inflation plan that included authorizing the Federal Reserve Board to implement certain types of credit controls under the provisions of the Credit Control Act of 1969. Operating under its own authority, the Federal Reserve also introduced a voluntary credit restraint program and tightened some already existing regulations, as detailed below. Taken together, the credit restraints were intended to reinforce traditional monetary policy measures that control overall money and credit growth while limiting the burden on certain sectors hard hit by high interest rates. Those sectors included small businesses, farmers, home buyers and builders, and auto dealers and purchasers.

The measures were designed to restrain the growth of certain types of consumer credit as well as those liabilities of large banks that had been used to support a rapid buildup in business loans. These

actions included: (1) a requirement that all types of lenders maintain on deposit at a Federal Reserve Bank a certain percentage of increases in credit card lending and other categories of unsecured consumer credit; (2) an increase in the marginal reserve requirement on managed liabilities—including large time deposits ($100,000 or larger) with maturities of less than a year, Eurodollar borrowings, and security repurchase agreements—of large member banks and U.S. branches and agencies of large foreign banks; (3) an extension of special deposit requirements to increases in managed liabilities of large nonmember banks and to increases in total assets of money-market mutual funds; and (4) a surcharge of 3 percentage points on frequent borrowing by large member banks from Federal Reserve Banks. In addition, the Board announced a voluntary program under which commercial banks and finance companies would limit the growth in total loans to U.S. customers to 6 to 9 percent for the period from the fourth quarter of 1979 to the fourth quarter of 1980.

Expansion of credit and money slowed abruptly after these measures were announced. The reaction of financial institutions, households, and businesses was sharper than anticipated. Banks and other financial institutions responded by accelerating and intensifying measures to restrict credit availability already in train; consumers and business sharply altered their credit behavior. Credit card sales and applications dropped off abruptly in March. Consumer installment credit outstanding declined in April for the first time in 5 years. Commercial bank lending to businesses moderated in March and then declined for the next 3 months. Over this same period the pace of monetary expansion slowed. During April all the monetary aggregates actually fell below their target ranges. The narrower aggregates declined for the second quarter as a whole.

As evidence mounted that credit growth had been arrested, the Federal Reserve began to relax various provisions of the program. In early July the Board ended the program entirely, and the President revoked the Board's authority under the Credit Control Act.

In retrospect, it appears that another factor contributing to the abrupt decline in credit growth was that interest rates finally had reached levels in late February and early March which were sufficient to discourage borrowing. However, data available at the time did not show this development. For example, business loans at large banks had increased rapidly from December to mid-February, in part due to borrowing in anticipation of the rumored adoption of credit controls, but in late February and early March business borrowing from these large banks stagnated—a pattern that could not be discerned until late March. Similarly, new home sales fell slightly in February and

plunged in March, although the only information available in early March had shown that sales advanced in January.

The mid-March announcement of credit controls did not immediately break the upward spiral in interest rates. In late March and early April the Federal funds rate came within a few basis points of 20 percent, and rates on most short-term and long-term market instruments rose to record highs before falling sharply over the course of the second quarter. The Federal funds rate fell faster than other short-term market rates from April to mid-June, but the funds rate then stabilized for the next 2 months at around 9 percent. During this period there were occasions when the Federal Reserve kept the Federal funds rate from falling below the 8½ percent lower bound set in May by the Federal Open Market Committee. Longer-term rates also declined as the spiral of inflationary expectations apparently was reversed in light of the growing slack in the economy and the weakness in the monetary aggregates. Downward adjustments in administered rates, like the prime rate and home mortgage rates, lagged the declines in market yields.

The downswing in most interest rates ended in June and July as monetary aggregates accelerated and credit demands again surged. The Federal Reserve did not accommodate the strong demand for bank reserves associated with acceleration of the monetary aggregates through the summer and fall, and the rate of expansion of adjusted nonborrowed reserves slowed from 31 percent at an annual rate in the second quarter to 4 percent in the third. Meanwhile, between late August and early December the discount rate was raised in three steps to 13 percent, and the Federal Reserve reimposed an additional surcharge on frequent borrowings by large banks. The Federal funds rate increased to over 20 percent in December. Other short-term market rates followed this upward climb. The prime rate adjusted more rapidly on the upswing than it had when rates had come down earlier in the year. Long-term rates, responding once again to continued inflationary pressures, reached rates at the end of the year near or above their March-April peaks. In mid-December short-term interest rates reached new peaks and began to fall rapidly once again. By early January the commercial paper rate, for instance, had fallen 3½ percentage points from its mid-December peak. Long-term interest rates fell about 1¼ percentage points over the same period.

The volatile movements of the narrow monetary aggregates over the course of the year reflected in part the pattern of economic activity. But the atypical behavior of the demand for money during 1980 also contributed to this volatility. As noted in Chapter 1, the demand for money—which is used by economists to characterize the relation-

ship among money, interest rates, and economic activity—has shown a tendency toward abrupt shifts in recent years. In particular, such shifts in 1975 and in 1976 led to monetary growth in the narrower aggregates, M–1A and M–1B, that was well below that expected on the basis of the historical relationship between money, income, and interest rates. While not fully understood, such shifts have followed rapid increases in interest rates to record levels, which appear to induce firms and households to adopt cash-economizing financial innovations. (These were discussed in detail in the 1978 *Report.*)

In the second quarter of 1980 another shift in money demand apparently took place. Declines in M–1A and M–1B were greater than would have been expected even in the face of the sharp fall-off in economic activity and high interest rates. But the current episode appears to differ somewhat from the previous shifts in that this time the shift was largely offset in the subsequent 2 quarters. This offset suggests that some special factors may have been at work. One hypothesis is that the imposition of credit controls may have temporarily led holders of currency and demand deposits to draw down these balances in the second quarter. With the end of the controls program in July this temporary depressant disappeared, and households were able to rebuild their cash balances. Whether this explanation is correct or not, it seems likely that a temporary money-demand shift contributed to the pattern of a decline in the money supply in the second quarter followed by an unusually rapid money growth in the second half of the year.

Thrift Institutions. In the first quarter of 1980, deposit flows to thrift institutions—mutual savings banks and savings and loan associations—slowed to the lowest rate since the fall of 1974. But after market interest rates peaked in late March and early April thrift deposits once more began to expand at the healthier pace registered in the preceding year. From December through April the decline in thrift deposit flows was softened by an inflow of funds attracted to the variable rate instruments offered to savers—the 6-month money market certificates (MMCs) and the new 2½-year small saver certificates (SSCs). For the next 5 months, however, there were net withdrawals of MMCs as depositors shifted funds into the higher yielding SSCs. From April to July funds were also shifted into money market mutual funds, where the technical method for calculating return gave these funds a temporary yield advantage over MMCs. By October MMCs had resumed healthy expansion, and for the first 11 months of the year MMCs and SSCs at thrift institutions together grew by $115 billion.

The other major sources of funds for thrifts also had interest costs tied to market rates. Members of the Federal Home Loan Bank

(FHLB) System increased their borrowing from the FHLB by over $7 billion to a level of about $47 billion. Many large institutions also augmented their small-account deposit flows by issuing "jumbo" ($100,000 or larger) certificates of deposit. Small denomination accounts with interest rates fixed by regulation experienced net withdrawals throughout the year. By the end of 1980 these fixed-ceiling deposits accounted for just over half of total thrift deposits, compared to roughly two-thirds at the end of 1979.

While the new deposit instruments and FHLB borrowings helped the thrifts sustain asset growth by allowing them to compete for funds at market interest rates, this new-found competitive status was achieved at considerable peril to the short-run profitability of these institutions. For much of last year the interest cost on such funds was well above the return on the longer-term asset portfolios, thereby depressing thrift industry profits.

In an environment of growing uncertainty regarding the direction of interest rates and their ability to sustain deposit flows, thrifts apparently became somewhat more cautious in their asset management in early 1980. When high interest rates curtailed deposit inflows in earlier cycles, thrifts generally sustained their mortgage lending activity by selling off their liquid asset portfolios. From March to May 1980, however, savings and loans (S&Ls) reduced their home mortgage commitments at a record rate but continued to acquire liquid assets. The percentage of assets held by insured S&Ls in liquid instruments actually increased over most of 1980—an unprecedented development in a period of weak deposit flows.

Home mortgage commitments rebounded sharply from June through September following the declines in interest rates and the resumption of deposit flows. In the fourth quarter commitments fell off slightly as rising mortgage interest rates once again led to a reduction in housing sales.

Credit Flows. Credit extended to the nonfinancial sectors of the economy during the first 3 quarters of 1980 was well below the pace of the preceding year, even though Federal borrowing doubled. Funds raised by private nonfinancial borrowers (including State and local governments) plummeted in the second quarter in the face of high costs, restricted credit availability, and the recession-induced reduction in demand. While private credit flows rebounded somewhat in the third quarter, they continued to lag behind the 1979 pace.

The household sector experienced the sharpest reduction in borrowing during 1980. In late 1979 the ratio of consumer installment and mortgage credit repayments to disposable personal income—a common measure of the burden of household debt—reached its historical peak. Thereafter, the rate of increase of these household debt

categories gradually abated through the first quarter of 1980. As reported earlier, the credit controls program induced consumers to reduce their installment debt sharply in the second quarter, and their rate of mortgage borrowing nearly halved. Even with some recovery of borrowing in the third quarter, required household debt repayments as a percent of disposable personal income continued to fall throughout 1980. At year-end this measure of household debt burdens was well below the mid-1979 peak. Moreover, real financial net worth per capita rose over the year. Taken together, these trends suggest that the household debt burden may not be as serious a constraint on consumer spending in 1981 as it was in late 1979 and 1980.

Borrowing by nonfinancial businesses followed a pattern similar to that of the household sector, though not as severe. Second quarter borrowing fell much more sharply than the decline in the financing gap (the excess of capital expenditures, including inventory accumulation, over internally generated funds), as businesses liquidated some of the short-term assets built up over the previous 3 quarters. In the third quarter businesses once again began to increase their liquid asset portfolios, and corporate borrowing increased despite a further reduction in the financing gap. Corporations took advantage of the precipitous drop in long-term rates in May and June by issuing a record volume of long-term bonds, but when long-term rates moved upward later in the summer they returned to short-term credit expansion to meet their financing needs.

The liquidity positions of nonfinancial corporations have deteriorated significantly since 1976, when the ratios of liquid assets and long-term debt to short-term debt reached their cyclical highs. By the end of the second quarter of 1980 the corporate liquidity ratio (liquid assets relative to short-term debt) had reached an all-time low, and long-term debt as a percent of total debt was considerably lower than the previous low reached in early 1975. Historically, businesses have tended to restore their liquidity and move to a healthier balance in their liability structures near the end of recessions, when reduced credit needs and lower long-term rates allow them to liquidate their short-term borrowing and extend the maturity of their liability structure. This time, however, the sharper-than-usual increases in interest rates have attenuated this normal restructuring process and threaten to induce further deterioration of the financial health of corporations in 1981.

THE PROSPECTS FOR 1981 AND 1982

In 1981 the economy should continue its modest recovery from the 1980 recession. Real growth is projected to be about 1¾ percent over the 4 quarters of the year, with virtually all of it coming in the last 2 quarters. Although both employment and the labor force are expected to rise about 1½ million during the year, the labor force gain is likely to be a shade larger. In consequence, the unemployment at year-end 1981 is anticipated to be slightly above its current level. The overall rate of inflation is forecast to be little changed from its 1980 pace. Given public concern with inflation, both fiscal and monetary policy are expected to be a restraining influence on economic activity in 1981 and beyond. However, there is both need and room for a prudently designed tax cut which would be phased in gradually over the next 2 years.

Over the 4 quarters of 1982 real growth is expected to be 3½ percent, with the proposed tax cuts providing significant stimulus. The somewhat faster pace of economic activity should yield employment gains of roughly 2 million during the year. The unemployment rate is expected to decline gradually throughout 1982. The continued moderation in economic activity is projected to produce a slowing in the overall rate of inflation of about 1½ percentage points during 1982.

FISCAL POLICY

The forecast presented below is based on the economic policy measures described in the 1982 budget. In fiscal 1981 Federal outlays are projected to be $662.7 billion. This amounts to a 14 percent increase, a slowdown from the 17 percent growth in fiscal 1980. A further slowdown is projected in fiscal 1982, with outlays rising 12 percent to $739.3 billion. Most of the increase in Federal outlays over the 2 years stems from the effects of inflation. Adjusted for inflation, total outlays will increase about 2 percent, with sizable real gains in defense spending partially offset by declines in nondefense spending.

In fiscal 1981 receipts are projected to be $607.5 billion, rising to $711.8 billion in fiscal 1982. Both these receipts, and to a lesser extent expenditures, reflect the President's proposed Economic Revitalization Program (ERP), designed to moderate the rise of tax burdens and provide incentives for business capital investment. The budget cost of the program is $3.3 billion in fiscal 1981, rising to $22.5 billion in fiscal 1982. The fiscal 1982 budget also includes a proposal to increase the Federal tax on motor fuels by 10 cents per gallon on June 1, 1981. Thereafter, the tax per gallon would increase with inflation. The proposed increase in the motor fuels tax is expected

to yield approximately $13 billion in fiscal 1982 and larger amounts thereafter.

The tax reductions embodied in the ERP will not totally offset increases in other taxes. Social security taxes, the windfall profits tax on oil company revenues, and inflation-induced increases in personal taxes will combine with the proposed motor fuels tax and withholding of tax on interest and dividends to produce a rising tax burden in 1981 and 1982 despite the ERP. In addition, even with the budgeted acceleration in defense spending and continued increases in interest outlays, overall growth in Federal spending will be relatively modest in real terms. Thus, the high-employment surplus is expected to increase substantially in both 1981 and 1982, helping to moderate demand and lower inflation.

The Economic Revitalization Program

The major focus of the ERP is on increasing investment and encouraging innovation. Depreciation rules would be both liberalized and simplified under the plan. This would increase the rate of return on new investment and the cash flow of firms making investments. The program would also make the current investment tax credit (ITC) partially refundable. The ITC and accelerated depreciation proposals would be retroactive to January 1, 1981. These two proposals are explained in detail in Chapter 1.

To shift additional national resources into investment, a larger-than-usual share of the funds available for tax reduction will have to be devoted to investment incentives. But some other forms of tax relief are both feasible and desirable. The President's program proposes three principal areas of such relief. First, individuals and employers would receive an income tax credit sufficient to offset the rise in social security taxes which took place at the start of the year. This type of tax cut was chosen because it not only would reduce tax burdens but also lower business costs and thus help modestly with our inflation problem. Second, for workers who face a growing social security tax burden but earn too little to pay income taxes, the program would expand the earned income tax credit. This would more than offset the increase in social security taxes for our lowest-paid workers. Third, the program proposes a phased reduction in the tax burden on two-earner families by reducing the so-called "marriage penalty" that taxes married couples with roughly equal incomes at rates higher than unmarried couples with the same incomes.

These reductions in individual income taxes would not become effective until January 1, 1982. The program, as originally proposed in August 1980, had provided for implementation of these tax cuts immediately upon passage. The delay in the effective date is dictated by budgetary prudence and the desire to avoid rekindling inflationary

expectations. Of course, if the economy should weaken seriously during 1981, the Congress would have reason to advance the effective date of these tax cuts.

MONETARY POLICY

In July 1980 the Federal Reserve tentatively set its monetary aggregate growth target ranges for the period from the fourth quarter of 1980 to the fourth quarter of 1981 generally one-half percentage point below the previous year's targets (Table 24). As discussed in Chapter 1, this reduction is intended to provide sustained monetary restraint consistent with an eventual return to price stability. There is little doubt that these target ranges will restrain the economy in 1981, but the amount of that restraint is less certain.

A rough method of assessing the restrictiveness of monetary policy in the period ahead is the increase in velocity implied by keeping monetary growth within the target ranges while still supporting expansion of nominal GNP sufficient to permit a modest recovery from the 1980 recession. Given the likelihood that inflation will sustain considerable momentum over the year, the implied increases in the velocities of the key monetary aggregates are well above the long-term historical averages. Historically, such large increases in velocity have been associated with a substantial rise in interest rates, a rise that could threaten the prospects for a moderate economic recovery in 1981.

Several potential developments during 1981 could alter the degree of monetary restraint implied by the money growth targets. First, as discussed earlier, in 1975 and 1976 there were sizable shifts in the demand for money in a direction that tended to increase velocity and thus accommodate more nominal GNP growth for a given monetary growth. One factor thought by many to be associated with the earlier shifts—a rapid runup in interest rates piercing previous peak levels—occurred in late 1980. While a money-demand shift cannot be predicted with any confidence for 1981, the possibility that another shift may materialize raises the difficulty of interpreting the degree of restrictiveness of the money growth ranges.

In addition, the introduction of NOW accounts on a nationwide basis in January will alter to some degree the relationships among the various aggregates and their relationship to economic activity. Shifts out of demand deposits into NOWs will depress the rate of growth of M-1A. On the other hand, NOW accounts probably will attract some savings deposits and other interest-bearing deposits, thereby boosting M-1B. The degree of the shift into NOW accounts will depend on the aggressiveness with which depository institutions price these new instruments and promote them, as well as on the public response. Partly on the basis of NOW account growth in New

England, the Federal Reserve has adjusted the midpoints of the target ranges for these narrow aggregates in an attempt to account for these structural changes (Table 24). But whether the adjusted targets will in fact yield the same degree of monetary restrictiveness in 1981 as the announced unadjusted targets would have yielded in the absence of nationwide NOWs is unknown.

Shifts into NOWs from demand and most interest-bearing deposit categories at banks and thrifts will have no impact on the rates of expansion of M–2 and M–3. However, other financial developments could influence their growth patterns. In particular, there is considerable uncertainty about whether money-market mutual funds and the variable rate SSCs—both of which are included in M–2 and M–3—will continue their unusually rapid growth in 1981. There is also uncertainty as to whether these instruments will draw funds from deposit categories in M–2 and M–3 or from sources not included in these broader aggregates.

Finally, several technical problems associated with the Monetary Control Act of 1980 will confront the Federal Reserve in 1981, further complicating the implementation of monetary policy. As discussed in Chapter 2, the act requires a sweeping restructuring of reserve requirements and extends both reserve requirements and access to the discount window to nonmember banks and thrift institutions. It will take some time for these institutions to develop a stable pattern of reserve management and borrowing behavior. During this transition period the Federal Reserve will find it more difficult than usual to predict borrowings, excess reserves, and other reserve measures. Thus, the relationship between reserves and money, which is the key to controlling money growth, will probably be less certain during 1981 and perhaps over a longer period.

In the face of all these technical difficulties and uncertainties, the danger in rigidly keeping the growth of M–1A, M–1B, or any single monetary aggregate within a narrow preset range regardless of other developments is obvious. With the long-run monetary growth ranges for 1981 already implying considerable tightness, there is a great risk that developments unrelated to the basic course of economic activity could artificially boost the growth rates of some of the aggregates and induce excessive monetary stringency. The Federal Reserve has attempted to account for the structural changes by adjusting the ranges for the narrow aggregates. Another option could be to place more emphasis on the broader aggregates like M–2, which are unlikely to be so greatly affected by the structural changes. An additional adjustment that would reflect the greater uncertainty of financial relationships in 1981 would be to widen the limits of the longer-run ranges.

The uncertainty of developments in 1981 calls for flexible response on the part of monetary policy. Since the Federal Reserve began announcing its longer-run targets in 1975, it has been understood that "The longer-run ranges will be reconsidered as conditions warrant." In 1981, this statement assumes even greater importance than usual.

WORLD AND DOMESTIC OIL MARKETS

As has been the case in the recent past, developments in world oil markets will continue to influence U.S. inflation and growth. World oil demand is likely to remain weak during 1981 due to the sluggish pace of economic activity in the industrialized nations and the continued adjustment to 1979's rapid increase in oil prices. In addition, oil inventories, which prior to the outbreak of the war between Iran and Iraq were very high by historical standards, may still insulate the consuming nations from limited supply disruptions. Nevertheless, even with these elements tending to limit price pressures, the price of imported oil is expected to increase somewhat faster than inflation in 1981 and 1982.

Decontrol of U.S. oil prices will bring still sharper increases in domestic oil prices during 1981. In November 1980 the average price of domestic oil was about $28 per barrel. That price will rise to the world market level by October 1981, at which time the price is expected to be in the neighborhood of $40 per barrel.

The total burden to U.S. consumers of the relative price increases in oil during 1981 is expected to reach about $30 billion by the end of the year. The bulk of this will go to the Federal Government in the form of higher receipts from the windfall profits tax and increased revenues from corporate taxes on the profits of oil companies. This increase in Federal revenues is one source of the estimated increase in the high-employment surplus during 1981. Of the remaining total, roughly $3 billion will accrue to foreign producers and about $8 billion to domestic producers. Some small fraction of these amounts will be respent in the United States in 1981, but the economic drag caused by the increase in oil prices during 1981 will still amount to roughly $10 billion.

THE ECONOMIC FORECAST

The economy has now experienced 2 quarters of moderate real growth following the sharp decline in the second quarter of 1980. At the same time there was a rapid runup in interest rates through mid-December. While significant declines in interest rates were recorded thereafter, the effects of taut financial conditions during 1980 are likely to weaken the pace of recovery during the first half of 1981. These weak conditions should be particularly evident in housing and in spending for consumer durables. Overall, it is likely that real GNP

will be essentially flat in the first half of the year, with a distinct possibility of 1 quarter of actual decline.

After midyear the pace of activity should pick up, although by historical standards growth will remain modest for a period of recovery (Table 25). The restrictive stance of monetary and fiscal policy will contribute to this result. In addition, consumers' real incomes will be restrained by rising oil prices. Over the 4 quarters of 1981 the combination of fiscal and oil-price imposed restraint is estimated to rise by about $60 billion, or 2 percent of GNP.

TABLE 25.—*Economic outlook for 1981*

Item	1980 [1]	Forecast range 1981
Growth, fourth quarter to fourth quarter (percent):		
Real gross national product	−0.3	1½ to 2
Personal consumption expenditures	−.3	1 to 1½
Nonresidential fixed investment	−6.0	1 to 1½
Residential investment	−17.6	6 to 7
Federal purchases	4.7	3 to 3½
State and local purchases	−.3	−½ to 0
GNP implicit price deflator	10.0	10 to 10½
Compensation per hour [2]	10.2	10½ to 11
Output per hour [2]	.2	½ to 1
Level, fourth quarter: [3]		
Unemployment rate (percent)	7.5	7½ to 7¾
Housing starts (millions of units) [4]	1.56	1½ to 1¾

[1] Preliminary.
[2] Private nonfarm business, all persons. Changes for 1980 are fourth quarter 1979 to third quarter 1980 at annual rates.
[3] Seasonally adjusted.
[4] Annual rates. October-November average used for fourth quarter 1980.

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

As the economy moves into 1982 it should maintain the momentum of the last half of 1981. Business fixed investment is expected to be a particular source of strength because of the proposed tax incentives for capital spending.

Consumer Expenditures

Consumer spending in 1981 will be constrained by sluggish growth in after-tax income due in part to inflation-induced increases in effective personal tax rates and the step-up in social security taxes. Overall, real after-tax incomes will show only a very small gain. Rising energy prices will also continue to put pressure on consumer purchasing power. As a consequence, consumer spending is projected to grow less rapidly than real GNP during 1981.

Last year the personal saving rate rose somewhat, ending the year at 5¾ percent. Over the last 4 years the saving rate has averaged a shade under 5½ percent, roughly 2 percentage points below the average of the preceding 10 years. Nevertheless, the attempt to maintain living standards in the face of sluggish income growth is likely to

produce a slight decline in the saving rate during 1981. Despite this, real consumer purchases of goods and services are only projected to rise by slightly more than 1 percent over the 4 quarters of 1981.

Consumer spending is expected to be particularly sluggish in the first half of the year. Purchases of autos and other credit-sensitive goods are likely to be the most affected, leading to a decline in durables spending during 1981. In contrast, expenditures by consumers on both nondurable goods and services are projected to rise during the year. A somewhat healthier growth in real consumer spending should be evident in 1982 partly due to the gains in disposable incomes that will follow the personal tax cuts proposed for the start of that year.

Business Fixed Investment

Surveys of capital spending plans by business for 1981 are currently showing surprising strength. One private survey indicates that for 1981 as a whole real spending on plant and equipment will increase 2 percent. The most recent Department of Commerce survey is slightly less optimistic, suggesting that business plans to increase real investment outlays by about 1 percent. The year-over-year increase indicated by these surveys would involve vigorous gains in investment during 1981.

These surveys need to be interpreted with caution. Business spending plans tend to be revised downward when the economy weakens, as it is projected to do in the first half of 1981. Thus despite the surveys, some continued weakness is expected during the first half of 1981. However, business capital spending should begin accelerating in the second half of 1981. An important source of this growth will be the proposed liberalization of both depreciation allowances and the investment tax credit. These are assumed to go into effect in mid-1981, retroactive to the start of the year. But given the lags in the investment process, these tax incentives should have their major impact in 1982 and beyond. Indeed, real business capital spending during 1982 is expected to increase substantially faster than real GNP. One further reason for the strength in this sector is the marked increase in capital spending anticipated in the energy industry.

Housing

During the last several months of 1980 the short-term prospects for the housing market worsened somewhat. After the swift rebound during the summer, housing starts leveled off at roughly a 1.55-million unit annual rate for September through November. Many observers were surprised that housing starts were maintained at that level, especially in November, in light of very high and rising interest rates. Part of the explanation appears to be that multifamily starts—

which increased from September to November—were bolstered somewhat by Federal subsidy programs. Single-family starts declined during this period partly due to a reduction in the rate of new home sales in September and October, but sales unexpectedly turned up slightly in November despite a rise in mortgage rates to 14 percent and above.

The high mortgage rates that are likely to prevail during much of 1981 will delay any further rebound in homebuilding activity. At current interest rates, many potential home buyers—especially those looking for their first home—cannot afford the required monthly mortgage payments. Nevertheless, with the continued high rate of household formation by the postwar baby-boom generation and the tax advantages of homeownership, potential housing demand is quite strong. Moreover, new financing arrangements may help reduce the problems of affordability. Thrift institutions are now offering several versions of the graduated-payment mortgage and have begun to offer shared-appreciation mortgages in which the lender receives an equity interest in the house in exchange for lower mortgage rates. In addition, there have been reports of homebuilders offering to meet part of the buyer's monthly mortgage payments in exchange for a higher sales price.

These factors suggest that housing starts may fall somewhat during the first half of 1981 in response to high mortgage rates. But thereafter, growing housing demand and the further development of innovative financing arrangements should lead to some rebound in homebuilding even if interest rates remain high. By the end of 1981 housing starts are expected to be in the range of 1.5 to 1.7 million units, with further gains probable during 1982.

Inventories

As observed above, recent inventory behavior has been noteworthy for its relatively quick adjustment to changes in final sales. As a consequence, unlike previous periods of recession and recovery, there has been no major inventory cycle this time around. Over the coming months the sluggish pace of economic activity will create continued pressure for moderation in inventory accumulation. In addition, the current high level of interest rates provides an additional incentive to hold down inventories. This suggests that inventory investment will be quite modest in the first half of 1981 and should gradually gain thereafter, roughly in line with sales, as economic growth quickens.

The Foreign Sector

The pattern of economic growth projected for the other industrial countries is quite similar to the one projected for the United States: very slow growth in the first half of this year, followed by somewhat

more rapid growth thereafter. During this year and next, growth abroad is likely to average between 2 and 3 percent—roughly comparable to average growth in this country. As a result of this similarity in growth patterns, net exports are not expected to show major swings over the coming 2 years. From the fourth quarter of 1980 to the end of 1982 a modest decline in net exports—about $2 billion in constant dollars—is projected. This decline will result primarily from a somewhat more rapid rise in import volumes than in export volumes, although neither of these is projected to grow very strongly. Some loss in U.S. competitiveness is implicit in these projections. American goods are likely to become somewhat more expensive in relation to foreign goods, both because of somewhat higher inflation in the United States and because of the strength of the dollar in foreign exchange markets. The strength of the dollar is likely to persist so long as interest rates in the United States remain high relative to interest rates abroad and if, as predicted, the U.S. current account remains in surplus. While the surplus is projected to diminish somewhat during the course of 1981 from the very high level reached in the second half of 1980, it should remain large through 1982 in the absence of any future oil-price shock.

Government Purchases

Real Federal purchases are projected to increase by about 3¼ percent during the course of 1981, and by a smaller amount in 1982. During both years real defense purchases are anticipated to increase substantially, offsetting projected declines in real nondefense purchases.

State and local government spending in real terms fell in 1980 and is forecast to decline again during 1981. The economy's sluggish growth, continued taxpayer resistance to new spending programs, and budget tightness will serve to hold down spending. With the resumption of healthier economic growth in 1982, State and local government purchases are expected to increase in real terms, although substantially more slowly than GNP.

Employment and Unemployment

Employment is likely to increase by slightly less than 1½ percent during 1981 and, with the pickup in economic activity in the following year, to advance by a shade more than 2 percent during 1982.

Growth in the labor force is projected to average about 1¾ percent over the next 2 years, advancing at a somewhat slower rate in 1981 and speeding up in 1982. This pace is in line with average annual growth over the last 30 years, although it does represent a distinct slowdown from the 2½ percent annual gain recorded in the 1970s.

These projections for employment and the labor force imply that the unemployment rate at year-end 1981 will be between 7½ and 7¾ percent, although it is likely to be above this range in the early part of 1981. During 1982 the unemployment rate is projected to decline steadily, ending the year in the range of 7¼ to 7½ percent.

Wage and Price Developments

Wages and prices should decelerate over the next several years. Several factors will be at work. With both fiscal and monetary policy aimed at continued restraint in aggregate demand, the prospects are for modest economic growth through 1982. These developments should limit demand relative to supply in both labor and product markets, gradually reduce inflationary expectations, and ultimately yield a better wage and price performance. At the same time, expanded tax incentives will spur investment and thus improve productivity growth. This too should contribute to moderating wage and price increases.

As discussed in Chapter 1, however, reducing inflation via demand restraint and increased productivity does not yield quick results. Furthermore, a number of factors will serve to keep inflation relatively high in the near future. These will include higher food price inflation, the recent increases in social security taxes and the minimum wage, and the continued rise in energy prices resulting from further oil-price increases and the decontrol of domestic energy prices. These factors suggest that wage and price increases during 1981 may nearly match those recorded in 1980.

Wages and Unit Labor Costs. After showing moderation through most of 1979, wage rates accelerated last year. While the relatively slack labor market will limit further wage acceleration this year, there is unlikely to be any noticeable slowdown. Both oil and food prices will rise sharply in 1981, maintaining the pressure for sizable wage gains. But by 1982, with continued restraint in aggregate demand and lower food- and oil-price rises (decontrol will be completed), the rate of pay increase should diminish, returning to the vicinity of wage gains seen in 1979.

Private wages and fringe benefits are projected to increase 10 to 10½ percent during 1981. In addition, the jump in payroll taxes which occurred on January 1, 1981 added slightly over one-half percent to the level of compensation. As a result, increases in total hourly compensation should average about 10½ to 11 percent over the 4 quarters of 1981, with a large bulge in the first quarter. With only a modest boost in payroll taxes scheduled for 1982, the rate of increase in total hourly payroll costs should slow noticeably.

In the face of sluggish economic activity in the first half of 1981, productivity could well record a slight decline. Thereafter, with the

reemergence of modest but sustained economic growth, productivity is projected to increase slightly faster than its underlying trend rate of 1 to 1½ percent. This productivity performance, in conjunction with the slowdown in the increase in hourly compensation projected for late 1981 and into 1982, should substantially moderate increases in unit labor costs.

Product Prices. The large share of wage and salary payments in total business costs makes the advance of unit labor costs a fundamental determinant of the trend increase in product prices. Thus, the prospects for product prices basically mirror those for unit labor costs, with the overall rate of price inflation as measured by the GNP deflator expected to be noticeably improved by 1982. Over the 4 quarters of 1982 the overall inflation rate is expected to drop to about 8¾ percent. During 1981, however, the rise in the deflator should roughly match the 1980 increase of 10 percent. Adoption of the motor fuels tax could add another one-fourth to one-half percentage point to growth in the deflator. The near-term projection for inflation reflects developments in energy discussed above and agricultural markets, which deserve special attention.

Food Prices. Significantly higher prices for food are anticipated for 1981, with a rise of about 12 percent likely. The production adjustments already underway by meat producers, together with the effects of the summer-long drought, will exert upward pressure on commodity prices. Continued increases in energy costs and labor wage rates imply that food marketing costs will increase at about the rate of general inflation.

Meat price increases will probably be most visible to the average consumer. After 5 years of steady increase, pork production is expected to fall 6 to 8 percent. Beef production is likely to be only slightly higher than its low level in 1980. Live animal prices are forecast to be much higher than in 1980. High prices (and limited supplies) of feedgrains will limit increases in poultry production. Meat supplies will also be tight on a world scale. While the seasonal pattern of the 1981 meat price increase is still in doubt, it appears that retail meat prices will rise most notably from April through August before stabilizing (and perhaps declining) late in the year. Crop conditions in the United States and worldwide will determine this pattern. Generally poor crop conditions early in the year could push grain prices much higher. Under these conditions, retail meat prices would be lower in the first half (as herds are liquidated) but higher in the second half than is now expected.

Agricultural conditions also point to higher prices for most other food items during 1981. Commodity price increases resulting from

the drought in 1980 will be reflected in food prices during most of 1981.

The Consumer Price Index. The CPI merits special attention because of its high visibility and its key role in the indexing of both wage contracts and benefit levels under Federal entitlement programs. The CPI is expected to increase by 12½ percent over the 4 quarters of 1981, with roughly one-half percentage point of this increase accounted for by the proposed increase in the motor fuels tax. This increase, which is roughly the same as was registered during 1980, is about 2 percentage points higher than the increase forecast for the GNP deflator. Among other reasons for this difference, the CPI is more sensitive to increases in oil and food prices. Further, mortgage interest rates have no direct effect on the deflator. Although the increase in the CPI in 1981 is likely to match the 1980 increase, the first quarter of the year is likely to see a surge of inflation in the CPI due to already recorded mortgage interest rate increases. After this effect has passed the outlook is for improvement during the remainder of the year and continuing through 1982. During 1982 CPI inflation is expected to decline to about 9½ percent.

Uncertainties in the Outlook

Among the various uncertainties in the outlook, two deserve particular attention: the possibility of a serious collision between the demand for funds and the monetary targets of the Federal Reserve, and the possibility of sharply higher oil prices should the continued loss of Iraqi and Iranian oil, or some other shock, tighten oil markets.

Interest rates now appear to have peaked in mid-December of last year. Most short-term rates have already fallen sharply, some by as much as 3½ percentage points. While long-term interest rates have fallen by much smaller amounts, the peaks in these rates also seem to have passed. But additional dramatic declines—like those of last spring—are not likely this year. There remains considerable uncertainty as to what the Federal Reserve's operating targets imply for the path of interest rates between now and the end of 1982. Furthermore, interest rates are still unusually high for the early stages of a recovery. Should rates surge upward again, it is likely that housing and other interest-sensitive sectors would suffer serious setbacks. In this event, weakness in economic activity could continue past midyear, and the rise in the unemployment rate might continue throughout the year.

A second risk is the possibility of a major hike in oil prices. Such a shock would contribute significantly to inflationary pressures at the same time that it would depress real economic activity and drive up the unemployment rate. The precise quantitative effects of such a

hike would depend on many factors, including the response of the Federal Reserve. Under plausible assumptions, if in early 1981 the world market price of oil were to rise $10 per barrel above that already assumed, then by year-end this would add about 2 percentage points to the inflation rate and reduce the growth of real GNP from what it otherwise would have been by 2 percentage points. Some further effects would be felt in 1982, and by year-end the unemployment rate would be about 1 percentage point higher than it would have been without this increase in oil prices.

While the two major uncertainties in the outlook raise the possibility that the recovery will be weaker than forecast, a stronger recovery is entirely possible. Any improvement in the outlook must have at its core a reduction in the rate of inflation. A better inflation performance could result from several causes, the chief among them being improved productivity, more moderate wage gains, or favorable crop developments. If, for example, that part of the slowdown in productivity which had remained a bit of mystery were to reverse itself, the outlook for business costs and prices could be greatly improved. Reductions in inflationary expectations would follow, reinforcing the direct effects of the productivity improvement. Presuming the Federal Reserve maintained its monetary targets, the improved inflation outlook would tend to reduce interest rates and generally ease conditions in financial markets. As a consequence, real economic activity could advance more rapidly than forecast.

THE GOALS OF ECONOMIC POLICY

The Humphrey-Hawkins Full Employment and Balanced Growth Act sets forth both general and highly specific objectives for two of the most important indicators of the country's economic health, the unemployment rate and inflation, and establishes the target of reducing Federal outlays to 20 percent of GNP. The act establishes specific milestones for the achievement of these objectives. An interim goal of Federal outlays equal to 21 percent of GNP is set for 1981; interim goals of 4 percent for the overall unemployment rate (3 percent for adults) and 3 percent inflation are both set for 1983.

According to the act, beginning with the 1980 *Economic Report* the President may, if he deems it necessary, modify the timetable for achievement of the interim and final goals for unemployment, inflation, and Federal outlays as a share of GNP. Last year's *Economic Report* discussed in some detail the degree of progress toward these goals and the reasons why their achievement by 1983 was not possible. The chief reason was the 1979 rise in oil prices. Federal policies

in 1979 and 1980 were of necessity aimed at limiting the negative impact of these oil-price increases.

Economic policy now faces a stiff challenge: to reduce a stubborn inflation, improve the growth of productivity, and expand output and employment. The policies required to meet this challenge are discussed in Chapters 1 and 2 of this *Report,* and they will lead to substantial progress toward the goals of reduced inflation and lower unemployment over the next 5 years. Longer-term projections are shown in Table 26. But even with this progress, it will not be simultaneously possible to achieve 4 percent unemployment and 3 percent inflation in the time envisioned in the Humphrey-Hawkins Act or in last year's *Report.* Attempts to reach either goal on the act's timetable would frustrate progress toward the other goal and could substantially impair the prospects for improved economic performance. In the long run such attempts would prove self-defeating and result in very harmful economic and social consequences. The more gradual path shown in the table will allow us to make progress toward our goals and to maintain them once achieved. Over the years ahead Federal spending as a share of GNP will decline, but the level of spending required to meet national needs and priorities, especially in the defense area, will not permit a reduction to the numerical target set forth in the act.

TABLE 26.—*Economic projections, 1981–86*

Item	1981	1982	1983	1984	1985	1986
Unemployment rate (percent), fourth quarter[1]	7.7	7.4	7.0	6.6	6.2	5.9
	Percent change, fourth quarter to fourth quarter					
Consumer price index	12.6	9.6	8.2	7.5	6.7	6.0
Real GNP	1.7	3.5	3.7	3.7	3.7	3.7

[1] Seasonally adjusted.

Source: Council of Economic Advisers.

SUPPLEMENT

National Income and Product Account Revisions

The national income and product accounts (NIPA), which provide data on aggregate output and income, were substantially revised in 1980 by the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce. The revisions included a refining of accounting concepts and estimation procedures, and introduced new and more recent sources of data. The last

major revision of the NIPA occurred 5 years ago and was reported in the January 1976 *Survey of Current Business* published by the Commerce Department. The current revision will be described in an article in the December 1980 *Survey*. All of the NIPA data discussed in this *Report* are the revised data, except as noted.

The major features of the revision are these:

- The data from three major new sources are now incorporated in the NIPA. These are BEA's 1972 input-output tables, the 1977 censuses, and the 1973 and 1976 Compliance Measurement Program of the Internal Revenue Service (IRS).
- Normal data sources which would have been used in the postponed July 1980 annual revisions of the NIPA (e.g., IRS tax return information, annual surveys of manufacturers, housing, and retail trade) were also utilized in these revisions.
- The major conceptual change in the NIPA involves the treatment of certain international transactions. The *reinvested* earnings of incorporated foreign affiliates of U.S. companies are now included in exports of services. The *repatriated* earnings of these affiliates were previously included in exports of services. The reinvested earnings of incorporated foreign-owned affiliates in the United States receive similar treatment thus adding to imports of services. Because the U.S. earnings abroad are larger than the foreign earnings here, the net result is higher net exports and gross national product especially since the late 1960s. Gross domestic product is, of course, unaffected by the change. This change makes the handling of foreign earnings in the NIPA consistent with that used in the balance of payments accounts since 1978.
- The treatment of international transactions has also been changed by using a new procedure for estimating the prices of service exports and imports.
- More detailed analysis of Federal purchases has allowed separate constant dollar estimates for both nondefense and defense purchases beginning in 1972.
- The level of detail at which output is deflated has been increased.
- Estimating procedures now allow a more complete differentiation between dividend and interest income than was previously reported.

The revisions have raised estimates of real GNP by about 3½ percent for 1979, by about 2½ percent for 1974, and by lesser amounts for earlier years. About one-third of the upward revision for the years 1977–79 was due to the conceptual change in the handling of foreign earnings. In addition, the revision in the deflators has, on balance, reduced estimates of prices, thus raising real output. Finally, estimates of real nonresidential fixed investment have been substantially increased, especially since 1973. The ratio of real

nonresidential fixed investment to real GNP, which had previously averaged 9.9 percent between 1974 and 1979, now averages 10.4 percent.

Past business cycle patterns have been little changed by the revisions. The GNP-measured turning points are all as previously reported. However, the peak-to-trough declines have been reduced by one-half percent and 1 percent for the 1970 and 1974–75 contractions, respectively. The NIPA now show the 1974–75 contraction being interrupted by 1 quarter of slight expansion in the second quarter of 1974, immediately following the period of the Arab oil embargo.

Total compensation remained roughly the same as before revision, but its composition changed. Wages and salaries in the most recent years are now higher and supplements lower than had been previously reported. Business net interest was revised upward by significant amounts especially in recent years. These revisions rise to $13.7 billion for 1979. Corporate profits were raised significantly, but chiefly because of the conceptual change in reinvested foreign earnings. Lowered estimates of corporate taxes contributed to higher corporate retained earnings and saving estimates for the most recent years. Personal saving estimates were also raised. This is because estimates of personal consumption were barely changed, while personal income was revised upward considerably. The personal saving rate in the 1970s was revised upward from an average 6.4 percent under the old estimates to 7.1 percent under the new estimates.

Potential GNP

Until a formal reappraisal of the historical growth in real potential output can be completed in the light of the 1980 benchmark revisions to the NIPA, a provisional procedure has been used to estimate real potential GNP. The provisional procedure includes two major changes. First, revised data on business output indicate a somewhat more rapid gain in worker productivity since 1973. As a result, the trend rate of growth in potential GNP has been increased by one-fourth of a percentage point from 1973 on. Thus the one-half percentage point deceleration in the old potential series that occurred in 1973, principally due to reduced productivity growth, has been changed to a one-fourth point deceleration. The further one-half point deceleration in potential that had been assumed starting in the first quarter of 1979 is still maintained. The second major change in the series was to add directly to potential the dollar estimate of the conceptual change to rest of world output that occurred from the revisions in the handling of reinvested foreign earnings. In this manner, the gap between actual and potential GNP is unaffected by conceptual changes to the NIPA. The dollar amount of these conceptual revisions has been growing very rapidly recently. As a result, these changes actually increase the estimated growth of potential in recent years by nearly 0.2 percentage point. The newly-constructed series grows somewhat less than 3 percent since the first quarter of 1979. This growth rate is expected to continue through 1981. Thereafter the series is projected to grow at 3 percent

per year. This modest acceleration is due to the combined effect of a small assumed increase in the growth rate of worker productivity offset by an expected decline in the contribution to growth of the conceptual changes to the NIPA. On balance, these changes to actual and potential GNP result in smaller output gaps over the recent past (Table 27).

TABLE 27.—*Revised potential GNP, 1973–80*

Year	Potential GNP (billions of 1972 dollars)	GNP gap (percent) [1]	
		Revised	Pre-revision
1973	1,234.9	−1.6	−0.7
1974	1,277.5	2.3	3.7
1975	1,320.6	6.6	7.7
1976	1,365.1	4.7	5.1
1977	1,411.4	2.8	3.0
1978	1,459.3	1.5	1.7
1979	1,504.6	1.4	2.0
1980 [2]	1,548.5	4.4	([3])

[1] Potential minus actual as a percent of potential.
[2] Preliminary.
[3] Not available.

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

CHAPTER 4

The World Economy: Coping with Transition

The economic challenges facing the United States which have been discussed in previous chapters of this *Report* are not unique to this country. The problem of continuing high inflation is broadly shared by many of the industrial (and developing) countries. The enormous increase in the price of energy has created difficult problems of adjustment everywhere. Productivity growth has slowed not only in the United States but also in other countries. At the same time that all countries individually take actions to deal with these problems, cooperation among countries is required to manage the ever increasing interdependence of the world's economies.

Over the next several years four major challenges will have to be surmounted to bring about the transition to a world economy with less inflation and higher growth.

First, a combination of demand restraint and vigorous efforts to improve supply must be employed to bring down inflation and raise productivity.

Second, the constraints placed on world economic expansion by limited supplies of energy must be loosened by policies to increase energy availability and reduce energy demand.

Third, continued close attention is needed to assure that the international financial system effectively handles the much enlarged flow of financial resources among countries.

Finally, the open trading system that contributed so importantly to rising prosperity in past decades must be strengthened in the face of increasing pressures to adopt protective measures and the temptation to indulge in "beggar-thy-neighbor" policies.

The energy challenge is well understood and its international aspects were discussed extensively in last year's *Report.* It will therefore be dealt with only briefly in this chapter. Following an initial discussion of recent and prospective economic performance in the major industrial countries, the chapter examines each of the remaining three challenges—the challenge to the conduct of macroeconomic and structural policies, the challenge to the financial system, and the challenge to trade relations.

THE INDUSTRIAL ECONOMIES: TRENDS AND PROSPECTS

In 1974–75, following the tripling of oil prices by the Organization of Petroleum Exporting Countries (OPEC), the industrial world experienced its largest recession since the second World War. In 1980, following a second major rise in oil prices, economic expansion again came to a halt. It is abundantly clear that price shocks of the size experienced in recent years cannot be absorbed without serious strains and disruptive side effects: real incomes are squeezed, inflationary forces are intensified, and output and employment are reduced. Fiscal and monetary policies cannot substantially offset or counteract all of these effects. Expansionary fiscal and monetary policies could moderate the decline in output, but at the cost of building yet higher inflation into the economy. Restrictive policies, on the other hand, could limit the rise in inflation, but they would also tend to accentuate the decline in output and employment. Following the second oil-price shock, most countries have opted for policies of moderate restraint. This choice reflects the judgment that such policies would stand the best chance of reducing secondary distortions in the structure of costs and prices and in the distribution of income among sectors, and thus would help speed the process of adjustment to the higher oil prices. That judgment appears to have been correct.

ECONOMIC ACTIVITY

Although all the evidence is not yet in, it appears that the second oil-price shock is being absorbed more smoothly than the first one was. Recent indicators and current projections show a smaller swing in output and a lesser surge in inflation for most countries. Table 28 shows recent growth rates and Organization for Economic Cooperation and Development (OECD) projections for the major countries. Except for the United Kingdom, the general pattern is one of relatively mild and brief recession concentrated in the second half of 1980, followed by a very modest but strengthening recovery in 1981.

TABLE 28.—*Real GNP growth in major industrial countries, 1976–82*

[Percent change from previous period; seasonally adjusted annual rates]

Country	1976 to 1979 annual average	1980		1981		1982 first half [3]
		Year [1]	Second half [1]	First half [2]	Second half [2]	
United States	3.9	−¾	−1¾	1	2½	3½
Japan	5.9	5	2¾	4	4¼	4¾
Germany	3.8	1¾	−3	½	1½	2
France [3]	3.3	1¾	½	1	2	2¼
United Kingdom [3]	1.5	−2¼	−5¾	½	−2½	0
Italy [3]	3.2	3¾	−3½	−1¼	2¼	2½
Canada	2.9	−½	−½	1¾	2	3¼
Total of above countries	3.9	1	−1¼	1¼	2¼	3

[1] OECD estimate.
[2] OECD projection.
[3] Gross domestic product.

Source: Organization for Economic Cooperation and Development (OECD).

There are several reasons why the recession appears to have been milder, and the rise in inflation less, after the second oil-price shock than after the first. In the first place, inventory movements are substantially smaller in the current cycle than they were in 1974–75. The massive inventory liquidation that marked the earlier recession is not being repeated. As a result, the decline in output has been smaller and the projected pace of recovery is initially slower.

Consumer spending also has been better maintained in relation to income. Saving rates rose sharply in all countries following the first oil-price shock, but they have not done so recently, except in the United Kingdom. Slowing consumer demand is fully accounted for in most countries by weakening household incomes, rather than by marked changes in saving behavior.

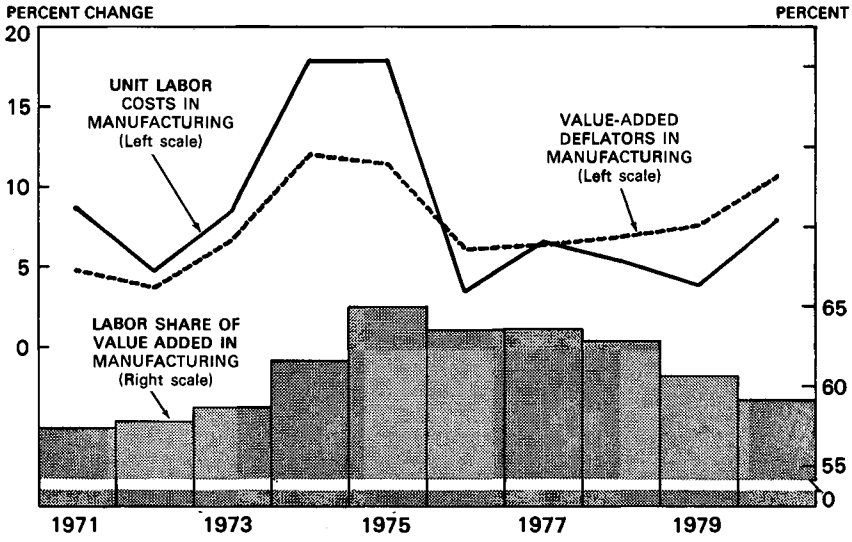
Finally, real wages in most countries have adjusted downward more rapidly in the wake of the recent oil-price rise than they did after the first one, and they have done so with a smaller acceleration of nominal wages. Both the different response of real wages and that of nominal wages have important consequences.

When the world price of oil rises, countries that import oil lose real income. This loss can be absorbed in several ways. If nominal wages rise in line with traditional productivity increments and also to match all increases in consumer prices that result when higher energy costs are passed through, then real wage incomes are protected. Corporate profits, however, are squeezed. In this case household consumption opportunities are preserved, but investment demand is likely to be curtailed as firms grapple with reduced cash flow and lower returns on new investment. Alternatively, if nominal wages rise by a lesser amount in relation to prices, then real wage incomes are squeezed, but the associated decline in real labor costs provides firms with a margin that offsets, in whole or in part, the increase in their energy costs. In this case, consumption may be curtailed, but investment incentives are better maintained.

Chart 10 shows the difference in how the real income loss was absorbed abroad following the two oil-price shocks. In 1974–75 unit labor costs rose much more than value-added deflators for manufacturing. This implied a sharp rise in the labor share of total value added, and a corresponding fall in the profit share, which was only gradually restored in subsequent years. The squeeze on profits was a major cause of low rates of investment in most foreign countries during the following years. And lagging investment largely explains the "hesitant recovery" abroad that was described in the 1978 *Report.* In contrast to the experience abroad, real wages fell in the United States in 1974–75, and investment demand grew apace during the subsequent recovery.

Chart 10

Labor Costs, Value-Added Deflators, and Labor Share in Six Major Foreign Countries



NOTE.—INCLUDES JAPAN, GERMANY, FRANCE, UNITED KINGDOM, ITALY, AND CANADA.
SOURCE: ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT.

In 1979–80, the increase in unit labor costs in major foreign countries remained less than the rise in value-added deflators, thus giving manufacturers some room to absorb increased energy costs without a major squeeze on profit margins. Largely for this reason, but also because the needs to modernize production and improve energy efficiency are substantial, business investment abroad may not weaken unduly in the current recession and may begin to rise again at an early stage of the projected recovery.

The necessary reduction in real incomes, whether it is initially absorbed by wage earners or by their employers, can be associated with a larger or smaller acceleration in inflation. If nominal wages rise sharply, and firms resist the erosion of profit margins by further raising prices, then the adjustment will take place in an environment of rising inflation. By contrast, if nominal wages do not accelerate, then real wages will initially fall as higher oil prices are passed through, but the underlying rate of inflation will not accelerate. And once the pass-through of higher oil costs is completed, actual price rises will

begin to moderate. The second pattern is preferable, not only because it is more likely to sustain investment but also because it generates less inflation. The relative moderation of nominal wage increases in most countries recently, in sharp contrast to the nominal wage explosions that occurred in 1974, is therefore encouraging.

Despite these generally favorable developments, only sluggish growth is now projected for most countries during 1981. Two major factors account for this. First, as already noted, inventory building will not provide added strength. Second, fiscal and monetary policies will remain restrictive. Fiscal deficits in 1980 were little changed from those of 1979 in the major foreign countries, despite the slowing revenue growth and expenditure increases associated with weakening economic activity. Discretionary fiscal policy actions tended to work toward restraint. Announced policy intentions in most countries suggest a further shift toward restraint in 1981. Growth in government expenditures, in particular, is planned to stay below anticipated growth in gross national product (GNP) in most countries, thus reducing the share of government and limiting the rise in budget deficits.

EXTERNAL POSITIONS

For the OECD countries as a group, the two oil-price shocks have had similar effects on trade and current-account positions. In nominal terms, the current account of the OECD as a whole shifted from surplus to deficit by about 1 percent of GNP in 1974 and by about 1½ percent of GNP in 1979–80. In both periods, however, the volume of real imports fell relative to exports; real trade balances therefore rose, moderating the decline in GNP relative to domestic demand.

But in one important respect the 1974–75 and 1979–80 periods have been very different. Both the volume of imports and of exports declined precipitously after 1974, even in relation to the large fall in GNP. The current decline in trade volumes has been much more moderate, and more nearly in line with the path of GNP. A renewed expansion of world trade, albeit at moderate rates, is anticipated as recovery proceeds.

Although the aggregate shift in current-account positions was broadly similar after the two oil-price shocks, there are some important differences in the way this shift was distributed among the major OECD countries (Table 29). In general, a larger share of the total shift has been absorbed by those countries whose relatively good inflation performance and previously strong external positions made them better able to finance these deficits. Most notably, the remarkable performance of Germany in 1974, when its surplus increased by $5.7 billion despite the rise in its oil bill, has not been repeated.

Rather, the German current account shifted from a surplus of about $9 billion in 1978 to an estimated deficit of $17 billion in 1980. The Japanese current account also moved sharply, from a $17-billion surplus in 1978 to an estimated $13-billion deficit in 1980. This shift reflected not only higher oil payments but also the adverse short-term effect of yen depreciation during 1979 and the first quarter of 1980 on the nominal trade balance. These two effects more than offset the strong Japanese trade performance, in volume terms, during the past year.

TABLE 29.—*Current-account balances in major industrial countries, 1978–81*

[Billions of U.S. dollars [1]]

Country	1978	1979	1980 [2]	1981 [3]
United States	−14.3	−0.8	5½	19¾
Japan	16.5	−8.8	−13¼	−6¾
Germany	8.7	−5.5	−17¼	−10½
France	3.7	1.2	−7¾	−6¼
United Kingdom	1.2	−3.9	4½	4¼
Italy	6.2	5.1	−5¼	−2¼
Canada	−4.4	−4.4	−3½	−3
Other OECD	−8.7	−18.4	−37	−35¼
Total OECD	9.0	−35.5	−73½	−40

[1] Current account balances inclusive of official transfers.
[2] Preliminary OECD estimates.
[3] OECD projection.

Source: Organization for Economic Cooperation and Development (OECD).

By contrast, the current account of the United States improved by an estimated $20 billion over this same period, as discussed more fully in Chapter 3. Similarly, the United Kingdom moved into substantial surplus during 1980, both because that country has become largely self-sufficient in oil—so that its trade account was not strongly affected by the rise in oil prices—and because the recession has been relatively more severe in the United Kingdom than elsewhere, thus limiting imports.

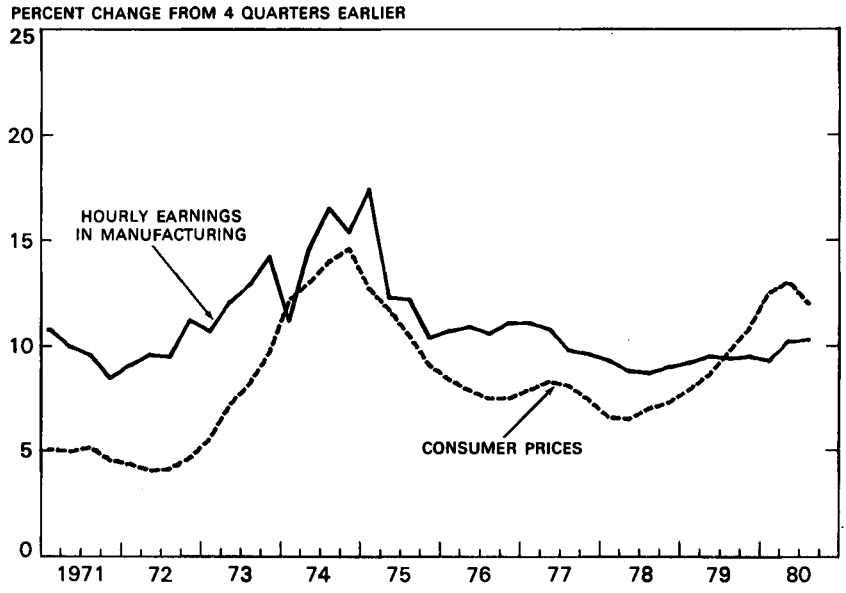
INFLATION

The different pattern of absorption of the recent oil-price shock compared to the earlier one shows up clearly in the movements of wages and prices. Chart 11 traces the movements of consumer prices and hourly earnings in manufacturing over the past decade for the major industrial countries. As measured by consumer prices, rates of inflation outside the United States tended to decline during 1978 to levels comparable to those prevailing in the early 1970s—though with substantial dispersion among countries. But consumer price inflation accelerated everywhere during 1979 and into 1980 under the impact of higher energy prices. In sharp contrast to the earlier period, however, hourly earnings accelerated only moderately, and lagged behind consumer prices in almost all countries. As oil prices

stabilized in mid-1980, inflation rates peaked and then began to recede in the second half of the year. On current projections, and assuming that oil prices do not again rise sharply, a continued reduction in inflation rates is in prospect for most countries during 1981—indeed, a somewhat more rapid reduction abroad than in the United States (Table 30).

Chart 11

Wage and Price Changes in Seven Major Countries



NOTE.—INCLUDES UNITED STATES, JAPAN, GERMANY, FRANCE, UNITED KINGDOM, ITALY, AND CANADA.

SOURCE: ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT.

Substantial differences among the major countries will persist, however. At one extreme, inflation rates in Germany and Japan during 1981 are likely to return to the moderate levels that were achieved in 1977–78. On the other hand, relatively high inflation is likely to persist in a number of other countries—especially Italy, but also the United States, France, and Canada—where wage rigidities appear to be more significant. In the United Kingdom, the continued adherence to restrictive fiscal and monetary policies, the strength of the pound, and substantial slack in labor and product markets appear to be causing a rapid decline in inflation from the high levels reached in 1979 and early 1980. But even so, inflation in the United Kingdom will remain relatively high.

TABLE 30.—*Inflation in major industrial countries, 1976–82*

[Percent change in prices [1]]

Country	1976 to 1978 annual average	1979	1980 [2]	1981 [3]	1982 first half [3]
United States	6.2	8.9	10½	10	9½
Japan	5.5	3.1	6¼	5¼	5
Germany	3.2	3.9	5¼	4	3
France	9.4	10.9	13¾	11¾	9½
United Kingdom	11.7	12.2	15½	12	9
Italy	12.0	14.8	20¾	15¾	13½
Canada	9.8	9.1	9¾	10	9¾
Total of above countries	6.8	8.1	10½	9¼	8¼

[1] Change in implicit price deflator for private consumption expenditures for United States, Japan, Germany, United Kingdom, and Canada. Change in consumer prices for France and Italy. Percent changes for first half 1982 are from previous half year at seasonally adjusted annual rates, except France and Italy, not seasonally adjusted annual rates.
[2] Preliminary.
[3] OECD forecast.
[4] Based on 1979 GNP/GDP weights and exchange rates.

Source: Organization for Economic Cooperation and Development (OECD).

SUMMARY ASSESSMENT

It is not possible to provide a definitive explanation of why the oil-price rise was absorbed more easily during the current cycle than it was in 1974–75. Timing is certainly one important consideration. The most recent runup in oil prices came at a time when most countries were still on an upswing from the previous recession, rather than at a peak. Hence, cyclical factors tended to offset, rather than accentuate, the 1979 price shock. In addition, the 1974 shock followed hard upon a major surge in industrial and agricultural commodity prices, which generated strong speculative pressures and excessive inventory accumulation. Commodity prices—except for the explosion in prices of precious metals in 1979 and early 1980—have shown a less marked upward trend in the recent period.

The key element promoting smoother adjustment, however, has been the restrained response of nominal wages to rising prices in most countries. This restraint has served a double function. It has helped to preserve a relationship between costs and prices that will encourage a more rapid resumption of growth by maintaining profitability and thus investment. It has also limited the rise in underlying inflation rates and thus reduced the probable duration and severity of the fiscal and monetary policy restraint that is required.

A number of factors may explain the moderate behavior of wages, and different factors may be more important in some countries than in others. The unambiguous adoption, in almost all countries, of monetary policies that did not seek to finance the rise in oil prices with faster rates of monetary expansion has certainly been an important factor, as has the pursuit of moderately restrictive fiscal policies. "Jawboning" by government officials may also have had an effect in

some countries, and in the United States a more formal incomes policy has played a role. Wage moderation may also have reflected the higher average levels of unemployment and associated labor market slack that prevailed in 1979. In some countries—especially those where the oil-price shock has been absorbed most rapidly such as Germany and Japan—wage moderation may reflect an implicit social consensus under which unavoidable reductions in real incomes are accepted by wage earners in the understanding that the distribution of income will not thereby be shifted to their disadvantage.

Although the adjustment to the recent runup in oil prices has proceeded relatively smoothly in most countries, it cannot be denied that the process is very costly. While the increased oil bill due to the price rises of 1979–80 amounts to about 2½ percent of the combined GNP of the OECD member countries, the cost in lost output is much larger. Taking into account the effects of both the oil-price rise itself and the restrictive monetary and fiscal policies it called forth, the OECD estimates that the level of GNP in the OECD member countries may be some 6 percent, or about $500 billion, lower by the beginning of 1982 than it would have been in the absence of the oil-price rise. While this estimate might be somewhat on the high side, it is nevertheless clear that even smooth adjustment cannot prevent major secondary repercussions.

RISKS IN THE OUTLOOK

Excluding the United States, real GNP in the major industrial countries is projected to rise at about a 2 percent annual rate from the second half of 1980 to the first half of 1982—a pace unlikely to be rapid enough to prevent some further increases in unemployment. Inflation rates in the industrial countries outside the United States are projected to slow—averaging about 8.5 percent by the first half of 1982, as compared to 11 percent in the second half of 1980.

The possibility of worse outcomes cannot be dismissed, however. In particular, one cannot be entirely confident that the pattern of wage moderation will continue, inasmuch as the reasons for it are not fully understood. A continuation of relatively restrictive monetary and fiscal policies in most countries is widely viewed as necessary to contain this risk, but these policies may also slow recovery by more than is now projected. More critically, the situation in the oil market is once again precarious following the interruption of supplies from Iran and Iraq. A further large increase in oil prices in 1981 could undermine the still fragile process of consolidation and recovery. The following section addresses this issue in more detail.

Table 31 summarizes world petroleum production and use patterns over the past 8 years. The most striking aspect of the table is how small the year-to-year fluctuations in production have been. The major disruptions of 1974 and 1979 were associated with very modest shifts in the balance between consumption and production. It is the low price elasticities of supply and demand in the short run, rather than wide fluctuations in the quantities supplied or demanded, that make disruptive price movements possible.

TABLE 31.—*Global oil balances, 1973–80*

[Millions of barrels per day, except as noted]

Item	1973	1974	1975	1976	1977	1978	1979 [1]	1980 [2]
OECD consumption	39.3	37.6	36.3	38.5	39.4	40.3	40.4	38.0
Less: OECD production	13.9	13.4	12.8	12.7	13.3	14.2	14.8	15.0
Equals: Required OECD imports for consumption (A)	25.4	24.2	23.5	25.8	26.1	26.1	25.6	23.0
OPEC production	31.3	31.1	27.6	31.2	31.8	30.5	31.5	27.8
Less: Non-OECD consumption minus non-OPEC, non-OECD production	5.4	5.2	4.3	4.8	4.9	4.9	5.0	4.8
Equals: Available to OECD from rest of world (B)	25.9	25.9	23.3	26.4	26.9	25.6	26.5	23.0
Balancing item (B minus A) [3]	.5	1.7	−.2	.6	.8	−.5	.9	.0
Estimated stock levels, end of year (billions of barrels)	(*)	(*)	(*)	3.6	4.0	3.9	4.2	4.2

[1] Preliminary.
[2] Forecast.
[3] Stock-building and/or statistical errors.
* Not available.

Source: Council of Economic Advisers.

The 1979 rise in oil prices occurred despite increased oil production. The curtailment of Iranian supplies in late 1978 was more than made up in 1979 by production increases elsewhere. Nevertheless, a number of prior developments had created conditions favorable to price increases. First of all, world consumption of petroleum, though rising more slowly after 1975 than in the previous decade, nonetheless increased steadily from 1975 to 1978, reducing the excess production capacity that had emerged after the first oil-price shock. Second, the real price of oil fell during this period, thus encouraging consumption and also reducing the real value of OPEC revenues. Finally, stocks were drawn down during the course of 1978—perhaps because falling real oil prices had made stock building appear unprofitable. As a result, the margin of flexibility available to accommodate the curtailment of Iranian supplies was small, and the incentives for OPEC countries to raise prices were strong.

It is clear that smaller price increases than actually occurred would have been sufficient to balance consumption and production. Rising demand for stocks, however, kept pushing prices higher well into

1980. After midyear, when consumption had fallen sufficiently to accommodate and moderate the stock buildup, price pressures began to ease. In fact, excess supply conditions were avoided only because a number of OPEC countries cut back their production.

Hindsight also shows that a less ambitious restocking pattern during 1979 and up to mid-1980 would have made a smoother adjustment possible. One cannot be certain of all the reasons why this restocking occurred, but several factors may have been important. First, additional stocks may have been needed to keep the distribution system operating smoothly, given the growing fragmentation of the world oil market and the resulting decreased ability of the major oil companies to shift supplies around to accommodate shifting needs. In addition, the disruption in late 1978 and early 1979 greatly increased feelings of uncertainty about future supplies and thus raised the precautionary demand for stocks. Finally, the rise in prices itself tended to increase the incentives for stock accumulation in anticipation of capital gains—at least until prices had risen sufficiently to make further price rises appear less probable. This speculative motive may have been strengthened by the belief that OPEC countries respond asymmetrically to market conditions. If OPEC producers respond to tight market conditions by raising prices but cut back on production when markets weaken rather than allowing prices to fall, they in effect build a ratchet under existing prices. Stock building then becomes a particularly attractive form of speculation when prices begin to rise, since the risk of major financial loss from a subsequent fall in prices is much reduced.

Although the massive buildup of stocks during 1979 and 1980 was very costly because of the added pressure it placed on oil prices, these stocks have subsequently proved valuable because they have provided a cushion in the face of the Iran-Iraq war. The oil market would in all probability have been slack in 1981, with little pressure on oil prices, if the Iran-Iraq war had not occurred. Prior to the onset of hostilities, consumption per day was several million barrels below world capacity, and stocks were at very high levels. Now, however, the situation is more difficult to assess. The war has removed nearly 4 million barrels a day from world oil supplies for an undetermined length of time, but some of this loss is being offset by increased production elsewhere. At the moment, stocks are still above their normal historical levels, and severe market pressures have not emerged.

The margin, however, is a narrow one. If oil consumption continues to decline as further adaptation to higher prices outweighs the effects of resumed economic growth, if the war does not widen, and if stock drawdowns are permitted to occur as needed, then a balance

may be preserved. Stocks are in fact being drawn down, consistent with the objectives set for the major oil-consuming countries at the meeting of the International Energy Agency late last year. But if the disruption is more severe, or mismatches on a country-by-country basis between demands and stocks induce a scramble for extra supplies and a bidding up of prices in spot markets, or if expectations of price rises—warranted or not—induce speculative withholding of stocks in anticipation of capital gains, then acute market pressures could once again develop.

DIRECTIONS FOR ECONOMIC POLICY: NEEDS AND CHALLENGES

Despite the progressive absorption of the 1979 oil shock and the projected beginning of moderate recovery this year, the world economy will be grappling with several difficult problems in the years immediately ahead.

First, policies of demand restraint are needed in all countries to fight inflation. This need is felt not only in those countries where inflation rates are highest, but also in those where considerable progress has already been made in bringing inflation down. For these latter countries, the concern is that an early relaxation of restrictive policies before inflationary expectations have been firmly laid to rest would allow inflation to reaccelerate. This would not only undo the progress achieved but would also undermine the credibility—and hence the effectiveness—of subsequent anti-inflation policies. The degree and duration of needed restraint, of course, varies among countries. Where inflation rates have been persistently high, continued restraint for a number of years may be necessary to bring inflation down and to convince people that it will stay down. Where inflationary expectations are less deeply entrenched and where inflation is lower, a shift to less restrictive policies may be possible sooner.

Because of the momentum of inherited inflation and rigidities in the setting of wages and prices, restrictive demand policies that aim to reduce inflation will also slow the growth of production and keep unemployment relatively high for some time. In this way, the inflation problem gives rise to an unemployment problem. Unemployment rates have risen in most countries during the 1970s, and no early reversal of this trend is in sight. High unemployment is costly not only because it imposes hardships on those who do not have jobs, but also because it fosters "preservationist" attitudes among society generally. Economic restructuring becomes more difficult when workers in declining firms or industries fear they will be unable to find other work, when pressure on governments to subsidize unprof-

itable activities intensifies, and when trade protection becomes more attractive.

The second fundamental problem is that in most industrial countries the growth of potential output has fallen because of lower productivity gains. The decline in productivity growth has generally been less marked abroad than in the United States, but it has occurred to some extent in all countries. Although all the reasons for this decline are not known, several common factors can be identified. Higher energy prices lead to the substitution of labor for energy, and thereby induce a slowing in productivity. Productivity growth has been slowed also by lower rates of investment in many countries, leading to a smaller rise in capital per worker and a slower pace of adoption of the technological innovations embodied in new capital goods. Finally, productivity growth outside the United States has been reduced because opportunities for technological borrowing have diminished as the "technology gap" between the United States and other industrial countries has diminished or, in many sectors, disappeared.

The decline in productivity growth directly reduces the scope for increases in real incomes and standards of living. Nevertheless, some have argued that as long as the growth of production is also limited by restrictive demand policies the decline in productivity is not all bad because it leads to more employment, and hence less of an unemployment problem, than would be the case if productivity growth remained higher. This argument, however, ignores the fact that lower productivity growth increases cost-push inflation. Since wage demands do not adjust downward when productivity growth slows, unit labor costs rise faster, putting increased upward pressure on prices. If nominal wage demands then accelerate in an attempt to achieve the real income gains obtained in the past when productivity growth was higher, the underlying inflation rate is increased still further. As a result, demand policies have to be more restrictive than otherwise to achieve a deceleration of inflation. In this way a slowing of productivity imposes a double burden. It reduces the growth of potential output, and at the same time it increases the degree of economic slack that is needed to achieve a given deceleration of inflation.

THE SEARCH FOR SOLUTIONS

While restrictive demand policies are needed to fight inflation, other policies must be put in place to reduce the costs that restrictive demand policies inevitably impose on the economy and to restore over time a more normal growth in productivity and living standards. Three broad approaches need to be pursued. First, supply-oriented policies that raise productivity and increase economic flexibility need to be put in place. Second, policies to increase energy supply and to reduce the demand for energy are needed to weaken the energy con-

straint on growth. Finally, policies that directly influence wage an price setting can play a role in some nations in lowering actual an expected inflation.

Supply-Oriented Policies

As discussed in Chapters 1 and 2 with respect to the U.S. econo my, supply-side measures can make a significant contribution to improved economic performance. Beyond the direct benefits that such measures can provide by increasing the efficiency with which resources are allocated, they can also serve to reduce the costs of restrictive demand policies. If flexibility in labor or product markets is increased, the effectiveness of demand restraint in slowing inflation also improves. If productivity growth is enhanced, not only does potential output rise but higher levels of capacity utilization can also be achieved, since cost-push inflation is reduced.

There is no master plan of supply-side policies that will be equally useful to all countries, given their different institutional arrangements and structural relationships. Earlier chapters of this *Report* discuss a number of policy approaches appropriate to the United States, and many of these may also be useful in other countries. Two approaches, in particular, stand out as important in most countries.

First, policies are needed to raise the share of GNP that is invested in new plant and equipment. Higher investment is necessary to raise productivity growth, to increase domestic energy production, and to accelerate the economic restructuring that higher oil prices and global shifts in patterns of comparative advantage have made necessary.

A potential problem exists with respect to greater investment, a problem which some have called the "low-growth trap." The argument is that if restrictive demand policies are used to fight inflation, investment will also be reduced because the existence of unutilized capacity will make companies unwilling to undertake investments that may not be needed until the more distant future. Lower investment, in turn, would reduce productivity growth and potential output, and hence reinforce the need for demand restraint. Thus, the final outcome might be a prolonged period of stagflation.

While there are indeed difficulties in trying to increase investment during a period of demand restraint, one need not accept the "low-growth trap" argument. Low rates of capacity utilization do, by themselves, have a negative effect on investment. Other factors, however, are also important and can offset this effect. As was emphasized earlier in this chapter, the recent oil shock has been absorbed in a way that has limited the erosion of profitability and cash flow to enterprises, and thus has supported investment. Moreover, the need for restructuring may require substantial investment even in sectors where

capacity utilization is low. The U.S. automobile sector is a clear example, and similar requirements exist in most countries. Finally, as discussed in Chapter 1 with reference to the United States, there is a good deal of evidence that policies to raise the return on capital investment or to lower the cost of capital can have substantial impacts on investment demand even when significant excess capacity exists. For all of these reasons it seems probable that countries can avoid a low-growth trap and, by pursuing vigorous investment-oriented policies, raise the share of investment in GNP even while continuing with policies of overall demand restraint.

The second supply-oriented approach is to increase the flexibility of labor and product markets by reducing unnecessarily burdensome regulation, by increasing competition within and across borders, and by improving policies for structural adjustment in industry and agriculture. Policies, for instance, that improve flexibility in labor markets through job training or other programs, or which reduce the downward rigidity of wages in the face of high unemployment, achieve several important objectives simultaneously. They reduce unemployment directly by easing frictional unemployment and stimulating the demand for labor in sectors where prevailing wage rigidities have made hiring unprofitable. Perhaps more important, greater labor-market flexibility increases the speed with which restrictive demand policies translate into lower rates of inflation. To the extent that this occurs, higher rates of real growth can be accommodated. Even if demand policies do not change so that nominal income growth is limited, real income growth is larger to the extent that inflation is less. Moreover, if inflation declines more quickly in response to demand restraint, both the severity and the duration of the needed demand restraint are reduced, thus further improving the prospects for higher growth and a more rapid absorption of the unemployed.

Other examples of policies that enhance flexibility include U.S. efforts in deregulation and regulatory reform, the progressive dismantling of price controls in France during the past several years, and the moves in some countries to allow more realistic pricing policies in nationalized sectors.

There are serious difficulties to be overcome, however. In many cases governments lack the tools for evaluating the costs and benefits of structural policies. Divisions of authority among agencies with different objectives or loyalties make coherent policy formulation, implementation, or evaluation difficult. There is, in general, a need to increase the "transparency" of government operations—both internally, so that governments themselves can come to a clearer perception of just what it is they are doing, and externally, so that those

outside government, both at home and abroad, can form a clearer idea of what is to be expected. A further inescapable difficulty is that strong political pressures arise to influence structural policies when potential gains or losses to particular sectors are at issue. More powerful techniques to enhance transparency can serve not only to improve the quality of decisionmaking, but also—by making costs and benefits clearer—to stiffen the resistance of governments to unbalanced political pressure.

Energy Policies

Increased investment in alternative energy sources, efforts to promote more efficient use of existing supplies, and measures to reduce vulnerability to supply disruptions are needed to improve growth prospects over the longer-term. So long as oil supplies are scarce and uncertain, and energy markets lack the flexibility to absorb disruptions in the flow of oil, the risk of recurrent oil-price shocks cannot be avoided.

While the market incentives provided by sharply higher energy prices will furnish the major impetus for many of the needed adjustments, government actions will also be needed in some cases. The development of some new sources of energy, for instance, may require government participation because of the long lead-times, very large scale, and technological risks associated with them. Furthermore, the building up and management of petroleum stockpiles requires a government role since private stocking provides insufficient protection against oil-supply disruptions for the reasons discussed in Chapter 2.

There is also a strong rationale for a broader international coordination of energy policies. The potential gains from a more rapid expansion of U.S. coal production, for instance, are increased if other countries, anticipating the increased availability of coal, at the same time increase the capacity of their electric-power systems to use coal instead of other fuels. More broadly, part of the social benefits that arise when one country increases its energy production or reduces its energy demand accrue abroad, since energy consumers in all countries will benefit from the resulting reduced pressure on world energy prices. Joint projects and other forms of international cooperation may therefore be particularly appropriate in the field of energy.

The rationale for international coordination of government policies is especially strong with regard to oil stocks. If countries attempt to increase their own security by bidding for stocks and thereby create conditions of excess demand, all countries will suffer the consequences of sharply higher oil prices. Conversely, the willingness of one country to use existing stocks in times when markets are tight may depend on the extent to which other countries do the same. A

coordinated use of stocks may forestall a surge in oil prices, but few countries would act individually to draw down their stocks if they thought that others would then exploit the opportunity to protect or increase their own.

Incomes Policies

The adoption of policies to influence directly the process of wage and price setting is another approach to improving economic performance. Elsewhere in this *Report* the possibilities as well as the problems of implementing tax-based policies to encourage wage and price restraint in the United States are discussed. The major foreign countries do not now have formal incomes policies—though interest in using them has at various times been evident in several of them. It does appear to be the case, however, that those countries with the greatest downward flexibility in wage and price behavior, and hence also the lowest inflation rates, have a stronger social consensus than those countries with higher inflation. Ironically, it may be that explicit incomes policies would be easiest to implement in those countries where the implicit social consensus makes them least needed.

MONETARY POLICY AND EXCHANGE RATES

In addition to the fundamental economic and social issues involved in designing and carrying out sustained policies of demand restraint and supply enhancement, there are problems of a more technical nature that must be dealt with. One of these, which has received a good bit of attention recently, arises from the interaction between domestic monetary policy and the foreign-exchange markets.

If it is perceived that different countries, through their monetary and fiscal policies, have significantly different objectives, especially with respect to inflation, then exchange rates are likely to move. For instance, if some countries use monetary policies aggressively to achieve a rapid decline in inflation while others pursue more expansionary policies that are judged likely to increase inflation, the currencies of the former countries will tend to appreciate against those of the latter. Such exchange-rate adjustments are both unavoidable over the longer run and necessary to prevent the building up of distortions in relative price levels across countries, so long as different policy objectives persist.

Exchange-rate adjustments do not always proceed smoothly, however. Exchange markets may at times become disorderly, and exchange rates may move more sharply than necessary to accommodate differences in policies or in other fundamental economic variables. Such risks probably increase when the divergence in policy objectives becomes more marked and expectations about future economic performance correspondingly more diverse. Particularly when inflation

rates are high, differences in policy objectives may have a magnified effect on exchange rates if the countries that attempt to ease policy are viewed as giving up on the fight against inflation. For these reasons, some combination of broad consistency in economic policy objectives and cooperation in exchange-market policies is probably necessary to ensure the smooth functioning of the international monetary system.

As discussed earlier in this chapter, most countries are now pursuing broadly similar policies of demand restraint aimed at reducing inflation, and exchange markets have not been subject to major disruptions over the past 2 years. Monetary policies in many countries have focused on keeping the rates of money growth—differently defined in different countries—on target or within target ranges. These targets are themselves set with an eye toward steady reduction in the rate of monetary expansion so as to be consistent with the hoped-for reduction in inflation. Even though monetary policies have shared the same general objectives and approach, they have had different consequences in different countries with respect to both the level and the variability of interest rates. For various reasons these differences have been particularly wide in the recent past and have raised several questions about the relationship between domestic monetary policies and the variability of exchange rates.

To the extent that actual and expected rates of inflation differ across countries, nominal rates of interest tend to be different even when monetary authorities pursue policies that restrict nominal demand growth to a comparable extent. If different interest rates simply reflect differences in underlying inflation expectations, international financial markets should not, in theory, be disrupted. Market participants would recognize that higher nominal yields on assets denominated in some currencies do not necessarily translate into higher rates of return if exchange rates move over time to reflect differences in inflation. For a variety of reasons, however, this mechanism may not always function smoothly. Purchasing power parities do not hold with any great precision in the short or even the more medium term. Therefore, market participants need not assume that depreciation will offset higher nominal yields over the period during which the asset is held. Furthermore, if asset holders perceive that monetary authorities are likely to resist incipient currency depreciations through intervention, they may be tempted to seek out high nominal returns on the expectation that they will be able to unwind their positions before the depreciation occurs. In such circumstances downward pressure on the exchange rates of countries with lower inflation and nominal interest rates might arise.

The large differences in monetary structures and instruments of monetary control across countries may also produce substantial differences in real interest rates for comparable degrees of monetary restraint. In particular, monetary systems which rely more heavily on nonprice rationing effects to achieve restraint may tend to have lower real rates of interest than those which have fewer such rigidities (though such rigidities may also cause greater dispersion of interest rates across different financial markets). Where such real interest rate differences arise, exchange-rate pressures may emerge even when nominal interest rates are properly discounted for inflation.

A second problem on which attention has focused has been the greater volatility of interest rates. As discussed in other chapters of this *Report,* both the change in the operating procedures of the Federal Reserve and major changes in the structure of U.S. financial markets have led to increased variability in U.S. interest rates. If foreign exchange markets are highly sensitive to interest rate movements, then variations in U.S. interest rates may lead either to greater variability in the exchange rates of other countries vis-a-vis the dollar or else to greater fluctuations in their interest rates. Of course, a reduction in the volatility of interest rates in the United States would be desirable on domestic grounds as well, if it could be accomplished without compromising the ability of the Federal Reserve to achieve its monetary growth objectives.

Although it is clear that considerations of exchange-rate volatility may sometimes reduce the freedom of monetary authorities to conduct monetary policies solely on the basis of domestic objectives, the problem may have been overstated in recent public discussions. Moderate movements in exchange rates, even if not strictly necessary from the perspective of fundamental economic conditions, need not impose significant costs on economic performance. Furthermore, if longer-run expectations concerning inflation and current-account balances are such as to provide stability to exchange rates, interest rate differences are not likely to be a major and continuing source of trouble.

The strength of the dollar in the latter part of 1980, for instance, reflected not only high interest rates but also the strong current-account position of the United States. At the same time, the weakness of the German mark, not only vis-a-vis the dollar but also against the other currencies of the European Monetary System, was also due to the large and unaccustomed German current-account deficit in 1980. The yen, to take another example, strengthened during the second half of last year and yet further in early 1981 despite a lowering of Japanese interest rates and a large, although declining, current-account deficit. This strength probably reflects the relatively buoyant

Japanese trade performance in volume terms, and also perhaps the ability of the Japanese authorities to attract OPEC funds. Again, the continued strength of sterling during 1980 was only in part the result of high nominal interest rates. Oil independence, the strengthening current-account position, and the general credibility of the British government's commitment to policies of restraint were also important.

To sum up, it appears that even with broad consistency in monetary policy objectives, problems can sometimes arise from the potential flow of funds across borders in response to differences in nominal interest rates. While the threat of such flows can complicate the conduct of monetary policy, this threat need not be so severe as to deprive carefully managed monetary policies of the flexibility they need to meet domestic objectives. Flexibility in monetary policy may, of course, occasionally require somewhat greater fluctuations in exchange rates than would otherwise be the case, but if fundamental economic conditions are such as to promote stability, such movements should not pose major problems.

CHALLENGES TO THE INTERNATIONAL FINANCIAL SYSTEM

The international community possesses a marvelously articulated set of private and public financial institutions through which funds are channeled from short-term lenders to long-term borrowers, from surplus to deficit countries, from one currency to another, and from capital-rich countries to capital-poor developing ones. The smooth functioning of this financial system has helped to make possible a rapid expansion of international trade and a relatively sizable transfer of resources to developing countries, both of which have contributed importantly to postwar economic growth and development. While the system has periodically required attention to keep it up to date with changing financial conditions, it has adapted and performed its critical functions well over the last three-and-a-half decades.

The huge increase in the volume of international financial flows occasioned by the recent oil-price rise, following upon a similar increase only 5 years earlier, has placed a major strain upon international financial institutions. Making sure that these institutions can continue to conduct vitally needed financial transfers soundly and efficiently is a second major challenge to economic policymaking in the years immediately ahead. If the needed transfers of resources from surplus to deficit countries are not made, or if they occur in ways that permit countries to avoid the painful adjustment to higher oil prices, the prospects for sustainable world economic growth and development will be seriously harmed.

The volume of international financing is reflected in Table 32, which describes current-account positions, net of official transfers, for broad country groupings, as compiled and projected by the OECD. The table provides an indication of the orders of magnitude involved, but specific numbers should not be overemphasized since even the historical numbers are subject to substantial margins of error. The projections for 1981 are particularly uncertain because the assumption of a constant real oil price that underlies these projections is at risk on account of the Iran-Iraq struggle.

Very large financing needs will persist over the next several years. While the OPEC surplus is expected to decline if oil prices do not rise sharply again, the decline will be more than matched by a projected improvement in the current-account positions of the larger OECD countries. The deficits of the smaller OECD countries will remain roughly unchanged at levels that—while broadly financeable—are nevertheless viewed as a problem by the countries themselves. The already substantial deficits of a number of the non-oil developing countries are projected to rise further, but whether financing on the scale implied by such deficits will be forthcoming must remain a question of serious concern.

TABLE 32.—*Global current-account balances, exclusive of official transfers, 1978–81*

(Billions of U.S. dollars; OECD basis)

Country	1978	1979	1980[1]	1981[2]
OECD	28	−13	−47	−12
Big Seven [3]	35	2	−14	21½
Other	−7	−15	−33	−33½
OPEC	5	70	120	86
Non-oil developing countries	−30½	−47	−62	−69
Other [4]	−9½	−3	−6	−9
Residual [5]	7	−8	−5	4

[1] Preliminary.
[2] OECD projection.
[3] United States, Japan, Germany, France, United Kingdom, Italy, and Canada.
[4] Centrally planned economies, Gibraltar, Malta, South Africa and Yugoslavia.
[5] Reflects statistical errors and asymmetries. Given the very large gross flows of world balance of payments transactions, statistical errors and asymmetries easily give rise to world totals (balances) that are significantly different from zero.

Source: Organization for Economic Cooperation and Development (OECD).

At an aggregate level, of course, the borrowing needed to finance deficits must be matched by the lending that surplus countries undertake. The relative ease, compared to expectations, with which the "recycling" of funds was carried out after the first oil-price shock no doubt owes a great deal to this "adding-up" property. The sharp increases in liquidity arising from massive inflows of OPEC funds into the major national and Eurocurrency banks provided the funding for the large increase in lending by these banks to the deficit countries.

No "Say's Law" operates in international financial markets, however, to assure that desired lending matches intended borrowing on a country-by-country basis. Much of the money available for lending comes from countries, especially OPEC countries, who wish to place their funds in short-term liquid deposits. But much of the borrowing, especially on the part of newly industrialized countries with relatively fragile debt-servicing capacity, is for long-term needs. Between these two different sets of preferences stand the intermediaries—some official international institutions and some international capital markets, but principally the large private banks of the industrial countries which accept liquid short-term deposits, make illiquid long-term loans, and in return for the profits they earn bear most of the risks involved. Channels of intermediation, however, can become clogged or overburdened. Perceptions of risk may limit the willingness of intermediaries to expand their lending to certain countries, or high borrowing costs may simply preclude countries with low incomes from borrowing, since they lack the resources needed to service this debt.

FINANCING THE DEFICITS OF THE NON-OIL DEVELOPING COUNTRIES

The broad financing pattern for the non-oil developing countries over the period from 1973 to 1979 is shown in Table 33, taken from IMF compilations. The character of the flows that finance these countries' deficits has changed markedly since 1973 when a large share of the financing was with funds, such as government transfers, that did not create debt. Since 1975, however, deficit financing has come to depend increasingly on sources that do create debt, especially on long-term borrowing on market terms from private sources. Beginning in 1979—and partial evidence suggests the trend continued into 1980—the share of private long-term financing declined. Offsetting that decline were a small rise in official financing, a stronger increase in short-term borrowing, and a slowing of reserve accumulation.

The aggregate data in Table 33 mask considerable diversity among countries, but two main groups can be identified. One group consists of the low-income developing countries which, largely unable to afford market terms, rely heavily on official financing on concessional terms. For them the continued availability of official finance on affordable terms is a major concern. In particular, the expansion of World Bank resources through the Sixth Replenishment of its soft-loan affiliate, the International Development Association (IDA), is critical for these countries. Yet without the approval of the U.S. Congress, IDA resources cannot be replenished. Unfortunately, that approval did not come out of the post-election Congressional session. If replenishment is not forthcoming, IDA will exhaust its commitment authority in March, and it will have no resources with which to meet the rising

requirements of the low-income countries it serves. Speedy action by the new Congress is therefore essential.

TABLE 33.—*Non-oil developing countries: current-account financing, 1973–79*

[In billions of U.S. dollars]

Item	1973	1974	1975	1976	1977	1978	1979
Current-account deficit [1]	11.5	36.9	45.9	32.9	28.6	35.8	52.9
Less: Financing through transactions that do not affect net debt positions [2]	9.8	[3]13.2	11.7	12.1	14.4	16.2	19.4
Plus: Accumulation of reserve assets (decumulation—)	9.3	1.2	−2.0	12.7	11.9	18.2	11.0
Equals: Net external borrowing [4]	11.0	[3]24.9	32.2	33.5	26.1	37.8	44.5
Long-term from official sources, net [5]	5.5	[3]9.6	11.4	10.2	12.4	13.3	15.9
Other long-term borrowing from nonresidents, net	6.6	10.2	14.7	17.6	15.8	25.1	23.4
From financial institutions [6]	4.0	8.6	9.2	10.9	15.6	19.3	17.3
Other, net [6]	2.6	1.6	5.5	6.7	.2	5.8	6.1
Use of reserve-related credit facilities, net [7]	.3	1.6	2.4	4.3	.4	.7	.2
Other short-term borrowing, net	([9])	5.1	6.5	3.9	−.8	1.1	5.0
Residual errors and omissions [8]	−1.4	−1.6	−2.8	−2.5	−1.7	−2.4	

[1] Net total of balances on goods, services, and private transfers (with sign reversed).
[2] Net unrequited transfers, net direct investment, SDR allocations, gold monetization, and valuation adjustments.
[3] Excludes the effect of a revision of the terms of the disposition of economic assistance loans made by the United States to India and repayable in rupees, and of rupees already acquired by the U.S. Government in repayment of such loans. The revision has the effect of increasing government transfers by about $2 billion, with an offset in net official loans.
[4] Includes any net use of nonreserve claims on nonresidents, errors and omissions in reported balance of payments statements for individual countries, and minor deficiencies in coverage.
[5] Public and publicly guaranteed borrowing only.
[6] Principally bond issues (public and publicly guaranteed borrowing only) and supplier credits, net of acquisitions of long-term assets.
[7] Comprises use of Fund credit and short-term borrowing by monetary authorities from other monetary authorities.
[8] Errors and omissions in reported balance of payments statements for individual countries, plus minor omissions in coverage.
[9] Less than $50 million.

Source: International Monetary Fund.

A different set of concerns arises for other developing countries such as the exporters of manufactured goods whose long-term deficit financing has come to a large extent from the private capital markets. For them it is obviously critical, first, whether the slowdown in long-term bank lending since 1978 is a "pause" that will shortly be reversed or a more permanent development; and, second, whether official resources—on which the poorer countries often have first claim—will be adequate to fill any remaining gap.

Private Financing

It is probable that the slowing of long-term bank lending to developing countries reflects both a greater unwillingness on the part of the banks to lend and an increased reluctance on the part of some developing countries to borrow. The relative importance of these two factors is hard to establish. There is considerable evidence that a number of developing countries have deferred borrowing. Whether they have done so because of high interest rates or, perhaps more critically, because they are unwilling to accept higher spreads over the London interbank rate (LIBOR) is unclear. Higher spreads raise

the cost of the loans, and they may also be interpreted in the financial markets as evidence that the borrowers are less creditworthy than countries borrowing at lower spreads. There are also clear indications of reluctance on the part of the banks to continue to increase their exposure in developing countries, either because of portfolio management considerations or because of pressures from bank examiners to limit and diversify risks. Numerous factors affect the willingness of banks to extend loans to particular countries. Chief among these are the external debt which a country has already incurred and judgments by potential lenders about the risk that a country may become unable to service its debt.

The problem of country risk arises most acutely if borrowing is perceived to lead to debt-service payments which can be managed only by still larger borrowing in the future. Several implications flow from this perspective.

First, the willingness of banks to continue lending depends importantly on their perception of the longer-run economic prospects of the borrowing country. A country that borrows to finance consumption—including the consumption of petroleum—is a riskier proposition than one borrowing to finance productive investment. The investment generates a return that can, in turn, be used to service the debt.

Second, while the additional loan needs of many borrowers stem from the need to pay for an increased oil bill, the ability to obtain financing depends partly on how well the borrower is deemed to be adjusting its economy to the reality of higher oil prices. To some extent, the greater the signs of progress toward reducing oil imports or expanding exports to pay for them, the easier it is to finance the remaining deficit.

Third, banks' concerns about debt rescheduling may be an important influence on the pattern of lending, but the direction of influence is ambiguous. If countries which were unable to service all of their external debts were to reschedule their official debts while continuing to meet payments to private lenders, the banks would have little incentive to assess borrowers' long-term prospects, or to lend in ways that foster appropriate adjustment by borrowers. Instead, banks have a clear incentive for caution when they are required to participate in rescheduling and to bear some reasonable portion of the burden. Banks are then more careful about making loans to countries where the longer-term prospects are uncertain. For this reason, the United States and other official creditors have insisted on requiring countries experiencing debt crises to seek relief from private as well as official creditors in order to assure a comparable sharing of burdens among all categories of creditors. When rescheduling is unat-

tractive to banks, however, a somewhat contradictory possibility arises: banks can defer rescheduling by continuing to lend. Delay may enable both borrower and lender to ride out a troubled period, but it can also exacerbate the troubles to be faced later on. Of course, banks' willingness to postpone rescheduling in this manner is limited by the increased risks involved. Furthermore, bank examination procedures—particularly in the United States and increasingly in other countries as well—are designed to signal the emergence of excessive exposure to risk.

Fourth, the future scope for bank lending will depend strongly on the continued expansion of world trade and the ability of developing countries to participate fully in that expansion. If export opportunities are blocked, then even borrowing for productive investment may not be sustainable because such investment may not yield, either directly or indirectly, enough foreign exchange to service the debt. Conversely, with ample trade opportunities, developing countries can earn the foreign exchange that enables them not only to service existing debt but also to demonstrate their continuing dependability as borrowers. This interaction provides one of the major avenues for developing countries to accelerate adjustment without sacrificing longer-run growth prospects.

Although it is possible to set forth in general terms the considerations that will determine the extent of private bank lending to the developing countries, it is impossible to predict with any precision or confidence the extent to which the recent pause in long-term lending will be reversed. On balance, the likelihood of somewhat reduced growth in private lending is high enough to place great importance upon the role of official agencies like the International Monetary Fund (IMF) and the World Bank.

Official Financing

Over the past year, the ability of the IMF and the World Bank to take the lead in promoting financing and adjustment patterns that are appropriate in current economic circumstances has been strengthened. The resources available to these institutions have been increased, and their operating procedures have been modified.

The role of the IMF has been substantially enhanced. A 50-percent increase in quotas, negotiated in 1978, went into effect on January 1 of this year. It will raise substantially the liquid resources available to the Fund over the coming years. Beyond this, the IMF is exploring the possibility of further increasing its resources by borrowing—first from member countries, particularly OPEC countries with large surpluses, but, if appropriate, from private sources as well. While such borrowing could not, and should not, supplant quotas as the primary source of Fund liquidity, it could play an important supporting role.

At the same time, access to the IMF by countries facing actual or incipient balance of payments difficulties has also been substantially increased. The quota increase itself has this effect, and it has been complemented by adaptations in the structure of Fund lending programs. The adaptations effectively increase the cumulative amounts that countries can borrow in relation to their quotas and lengthen the adjustment period for IMF supported programs. Finally, increased emphasis is being placed on structural considerations in the formulation of IMF stabilization and adjustment programs.

World Bank resources have also increased, albeit without full U.S. participation. In the last days of its 1980 session, Congress did appropriate $328 million toward the Bank's 1977 Selective Capital Increase. But the Congress has yet to approve the U.S. share of the 1980 General Capital Increase. This increase went into effect in October 1980 with the formal agreement of 75 percent of the Bank's voting power.

The World Bank, too, has modified its programs in the past year. While continuing to expand its traditional project and sector lending, the Bank has begun to develop a new type of lending program aimed specifically at structural adjustment. This lending is intended to complement the shorter-term borrowing that countries engage in for balance of payments reasons with long-term funding to restructure economies in ways that will strengthen their underlying external positions. Furthermore, ways are actively being sought—perhaps through a new energy affiliate of the Bank—to increase sharply the resources available for energy exploration and development in developing countries. Over time, the resulting increase in domestic energy availability will tend to ease the financial burden of developing countries by lowering their oil imports. Increased world supplies and more suppliers may also make future energy price shocks less likely.

The extent to which the official institutions will be able to meet the future financing needs of the non-oil developing countries will depend in part upon the size of the gap which must be filled after private financing and bilateral assistance—particularly OPEC assistance for oil-deficit countries—has been accounted for. The size of this gap is very difficult to predict. But the recent expansion in the resources of the official institutions and their demonstrated capacity to adapt to changing needs suggest that they are capable of dealing with a very wide range of possible problems.

CHALLENGES TO INTERNATIONAL TRADE RELATIONS

The progressive dismantling of trade restrictions during the post-World War II period and the resulting rapid growth of world trade

were of central importance to the worldwide rise in prosperity during the 1950s and 1960s. But the open trading system has come under increasing pressure in the 1970s. Economic growth has slowed, unemployment rates have risen, and the balance of payments positions of oil-importing countries have deteriorated. As a result, protectionist sentiments have strengthened, and the promotion of exports has become a more explicit aim in many countries. Furthermore, mounting structural difficulties in a number of key sectors have encouraged the view that cartelization or market-sharing agreements among countries can ease the burdens of adjustment. As a consequence, the climate for trade has become more clouded despite the ratification in 1979 of the agreements reached in the Multilateral Trade Negotiations. These agreements strengthen the international trading system by limiting the use of trade-restrictive practices and improving the mechanisms for the settlement of disputes and thus represent an important step forward. They are unlikely to prevent an intensification of trade frictions, however, if the underlying commitment of governments to open trade is eroded.

An important but perhaps inevitable cause of the emergence of a more difficult environment for trade is the decline in the relative dominance of the United States in the world economy. In the early post-World War II period the United States was in a strong position to promote a more liberal trading order without much regard to strict reciprocity. Because imports constituted only a small share of the U.S. market, the growth in imports that freer trade entailed was not viewed as disruptive. At the same time, the demand for U.S. exports was strong because foreign production capacities had been damaged by the war and because American goods embodied technologies not available elsewhere. Thus, open trade was not perceived as a threat to the overall U.S. trade position. For other countries, on the other hand, the promise of increased access to the vast U.S. market made the opening of their own borders to imports seem a favorable exchange.

While the conditions that made it so easy to support no longer prevail, open trade nevertheless confers substantial benefits on the world economy. Preservation of an open trading system must therefore become a truly multilateral effort and the shared responsibility of the major trading nations. It is probable that few governments today can effectively resist taking actions to redress what are viewed domestically as the unfair trade practices of others. All countries must therefore practice self-restraint, not only in the traditional sense of minimizing protectionist measures against imports, but also in avoiding measures that artificially promote exports at the expense of other countries. It must be recognized that the only real alternative

to closer cooperation is to risk a cycle of trade retaliation that would leave all countries substantially worse off.

Three specific challenges to open trade are taken up in the following pages: the heightened pressures to use trade barriers to save domestic jobs, the increased use of direct and indirect subsidies to promote exports, and the emerging reliance on market-sharing arrangements to ease adjustment.

PROTECTION AND EMPLOYMENT

The pressure to protect domestic sectors from import competition is, to a large degree, a pressure to preserve jobs. Imports are seen as substituting foreign for domestic employment and income abroad for income at home. This pressure increases when economic growth slows and unemployment levels rise, since alternative employment possibilities are reduced.

Job losses of course occur continually within an economy as some sectors contract. But meanwhile new jobs are being created in expanding sectors. International trade is but one of the pressures behind such shifts. Indeed, the evidence suggests quite strongly that, at least in the United States, changes in consumer demands and differential productivity gains from capital investment and technological change have been far more important than increased imports in accounting for relative employment declines in lagging sectors.

But regardless of the source from which the pressures for adjustment come, intersectoral shifts in employment cannot be achieved without transition costs. The skills no longer needed in declining sectors may not match the skills required in growing sectors. The regional distribution of employment opportunities may shift, but workers may not be in a position to move. And, even if workers who lose jobs find new ones, their wages and job satisfaction may be lower if specialized skills acquired over many years are made obsolete. The more rapid the pace of adjustment, furthermore, the greater these transition costs will be, since less of the adjustment can then be accomplished through natural employee attrition and ongoing demographic shifts. Because of transition costs, governments are often tempted to intervene in an attempt to slow the pace of adjustment. Such policies can perhaps be justified when the pressure for rapid adjustment is very strong or when it is thought that the pressure will subsequently be reversed. The risk is, however, that government efforts to ease adjustment may have the effect of deferring or preventing it. Experience suggests that this has often been the case. Such outcomes are costly. Although transition costs are avoided for a time, productivity is impaired, inefficiency is increased, inflationary pres-

sures are strengthened, and in the longer term employment too may suffer.

In seeking a balance between justified intervention to reduce transition costs and undue protection of uneconomic sectors, careful assessment of the broad range of costs and benefits is needed. This is particularly the case with regard to the use of trade-restrictive policies, for three reasons.

First, pressure to restrict imports can easily arise even when imports are not themselves the major threat to existing jobs because the tools are more readily at hand to restrict imports than to deal with other adjustment problems. In the United States the President has considerable discretionary power to impose trade restrictions—subject, however, to prior findings of injury by the International Trade Commission. In other countries too, import restriction is generally easier to implement than adjustment policies requiring government budget resources.

Second, there is mounting evidence that trade protection is a very expensive way to preserve jobs. In case after case that has been examined, the cost to consumers per job saved—that is, the extra costs faced by consumers in the form of higher prices when imports are restricted—has turned out to be at least several times higher than an average worker's income. Although these consumer costs are large in the aggregate, in no one instance do they seem large on a per capita basis. As a consequence they are not highly visible and therefore easy to overlook.

Finally, trade restriction, like other forms of domestic protection but more clearly so, impairs employment prospects over the longer run. Jobs saved in the protected sectors are saved in part at the expense of jobs elsewhere in the domestic economy. Higher prices for protected goods reduce consumers' ability to purchase other goods, and thereby limit employment growth. If imports are restrained, export opportunities and employment in the export sector are also reduced—directly if foreign countries retaliate, and indirectly even if they do not, because the exchange rate tends to appreciate to restore balance between exports and imports over the longer term. Moreover, trade restrictions increase prices directly and further exacerbate inflation by limiting productivity growth. As a result, the ability of governments to pursue expansive policies to support employment is further reduced. Thus the jobs saved by trade restrictions are likely to be matched by job losses elsewhere. As is so often the case, however, the jobs saved are immediate, specific, and highly visible; the jobs lost are in the future, diffused throughout the economy, and almost invisible.

While all countries, in attempting to balance long-term gains against short-term pressures, may find the need for trade-restrictive actions compelling from time to time, the risks are that such policies will be resorted to excessively. These risks become considerably larger to the extent that other countries aggressively use subsidies to promote exports. The following section takes up this issue.

EXPORT SUBSIDIES

Countries subsidize exports directly or indirectly for a variety of reasons. Faster export growth is seen as a way of overcoming the balance of payments deficits that higher oil bills have caused for many countries. Subsidies may form part of an industrial strategy to promote the growth of key sectors and to exploit economies of scale when they dictate a global marketing approach. Subsidies may also be a counterpart to other policies, for instance, policies to limit excess capacity and job losses in declining sectors by selling abroad. Subsidies to exports can also arise indirectly—for instance, from domestic policies that keep the price of energy, and hence the cost of production in energy-intensive sectors, artificially low. Or they can arise when investment incentives to particular regions or industries reduce the cost of capital to firms that produce certain goods.

The Subsidies Code that was negotiated in the Multilateral Trade Negotiations places certain restrictions on the use of subsidies and permits the adoption of countervailing duties in cases where subsidies can be shown to cause injury to trading partners. However, given the various and often complex forms that subsidies can take, and the fact that subsidies of exports may often arise as by-products of policies directed at domestic goals, the Code by itself is unlikely fully to resolve the problems that subsidies sometimes create. Self-restraint among countries in the use of subsidies is therefore necessary. Two considerations are of critical importance in this regard. First, subsidies often end up losing their effectiveness in promoting exports. Initially, profits and employment in a subsidized activity will increase and a competitive advantage will emerge. Gradually, however, the extra profits that are created by the subsidy may be diluted by higher wages for the workers in that activity, or—if the activity is a large user of scarce resources—in higher prices for those resources. A familiar example is the bidding up of the price of farm land suitable for a particular crop when the price of that crop is supported by the government at higher levels. The bidding up of costs of production in this way ultimately tends to eliminate the competitive advantage that the subsidy provides, thus increasing pressures for yet further subsidization to restore the advantage and making removal of the subsidy increasingly difficult.

Second, the pressure for countries to match the subsidies provided by other countries means that the opportunity to increase market shares through subsidies is far less than it appears to each country in isolation. This consideration is particularly important in the area of export-credit subsidization, which has increased sharply in recent years. Most of the major industrial countries have official export-credit agencies that provide medium and long-term financing at fixed rates of interest for "big ticket" exports, such as power plants, aircraft, and manufacturing plants. These interest rates have not risen in step with rises in market rates, thus greatly increasing the subsidy element of such trade financing. Yet, because export agencies in all countries are under pressure to match or perhaps improve on the terms provided by others so as to help secure the sale for a domestic producer, the likely result is a costly standoff, with global overcapacity in subsidized sectors persisting. The heads of state of the major countries made a specific commitment at the Venice Summit in June of last year to bring export-credit rates more closely into line with market rates. Efforts to renegotiate an export-credit agreement based on this commitment failed, but negotiations may resume this year. In some countries—particularly some members of the European Community—it may not be clearly perceived how wasteful and counterproductive export-credit subsidies are.

MARKET SHARING

Antitrust laws in the United States prohibit firms from attempting to divide up markets by allocating market shares, formally or informally. The anticompetitive and price-raising consequences of such arrangements are well known. On an international level, however, there are increasing temptations for governments themselves to develop or to bless such market-sharing arrangements for sectors facing structural difficulties. The Multi-fiber Agreement, which sets a framework within which individual countries have negotiated a complex system of quotas on textile and apparel imports, is an example. Relatively longstanding agreements exist with respect to shipbuilding. The issue of automobile imports, so important in the United States, has also been of great interest and concern internationally—and indeed informal or formal industry agreements between European and Japanese auto producers are widespread.

The temptation to "organize" world markets when adjustment pressures arise is understandable. If a number of countries need to adjust, the pressures to assure that each country bears its fair share of the adjustment burden are powerful. Negotiated arrangements may appear both more effective and less confrontational than the use of formal grievance procedures under the General Agreement on Trade and Tariffs (GATT). As short-term responses to serious

threats of disruption, market-sharing arrangements may indeed be preferred if the alternative is a resort to predatory behavior.

There are serious risks, however, in following this course. First, the substitution of informal, ad hoc agreements for the more formal mechanisms of the GATT reduces the transparency of the trading system. The "rules of the game" become more complex and less visible to public scrutiny, and procedures for redress become uncertain. Second, such agreements may perpetuate themselves. In seeking to assure that adjustment is fairly distributed, they may in fact delay the needed adjustments and perpetuate the excess capacities that gave rise to the problem in the first place. Finally, such arrangements, by requiring balance among countries in the degree of adjustment, almost always guarantee that it is not the least efficient capacity which is eliminated.

NEEDED RESPONSES

Pressures on all countries to use trade policies to promote shorter-term gains for particular sectors, to ease the process of adjustment, or to protect jobs in sensitive areas will almost certainly remain acute. It is also quite certain that in some cases such pressures will not be resisted. Indeed a simon-pure attitude is unwarranted on the part of any country, and unrealistic when other countries also yield to such pressures. From a broader perspective, however, it is highly important to keep restrictive trade policies within circumscribed limits. First, the achievement of both higher exports and lower imports is not feasible—strictly so for the world as a whole, and to a very large extent for individual countries. The only effective choice is one between slow trade growth or more rapid trade growth, and the historical record makes clear that the latter is to be preferred. Second, it is imperative to aim for consistency in the formulation of policy. The overriding need in all countries is to reduce the current inflation, and also to reduce the inflation-proneness of economies that have become more inflexible and less competitive. Trade policies that aim for short-term protection intensify inflation directly by reducing competitive pressures, and they increase economic rigidities by sheltering excessive wages, profits, and other incomes in particular sectors from the discipline of the market. Better integration of trade policy into overall economic policy formulation is needed in all countries to provide a clearer perspective on its real costs and benefits.