# THE ANNUAL REPORT
# OF THE
# COUNCIL OF ECONOMIC ADVISERS

## LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,
*Washington, D.C., January 23, 1987.*

MR. PRESIDENT:

The Council of Economic Advisers herewith submits its 1987 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.

Sincerely,

Beryl W. Sprinkel
Chairman

Thomas Gale Moore
Member

Michael L. Mussa
Member

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CHAPTER 1

# Growth and Adjustment in the United States Economy

THE UNITED STATES ECONOMY is in the fifth year of the current expansion, and an acceleration of real growth with continued moderate inflation is projected for 1987 and beyond. While the pace of economic growth remained moderate in 1986, expansion proceeded on a broad front. Real gross national product (GNP) rose by 2.2 percent during the year, with output expanding in most sectors. Due in large part to a sharp decline in energy prices, inflation fell to the lowest rate in more than two decades. Rising real personal income and significantly lower interest rates contributed to strong growth of consumption and of residential investment. Despite a decline in business fixed investment and further deterioration of the trade balance, the unemployment rate fell to 6.6 percent and total employment grew by more than 2½ million persons. In each year of this expansion, more jobs were created in the United States than in the combined economies of the next six largest industrial democracies.

More than 4 years of economic expansion, with the inflation rate remaining near or below 4 percent and interest rates declining to their lowest levels in 9 years, have laid the foundation for sustainable real growth with moderate inflation. The problems that remain in the U.S. economy are primarily sectoral and structural: the Federal Government controls too much of the Nation's resources; a large trade deficit adversely affects many trade-sensitive industries and encourages protectionist sentiment; the domestic oil and gas industry and local areas heavily dependent on it are suffering the consequences of the decline in world oil prices; conditions remain depressed in much of American agriculture; and excessive and inappropriate regulation continues to burden business and consumers.

## OVERVIEW OF THE REPORT

This *Report* analyzes the structural and sectoral problems that remain in the U.S. economy. It assesses policies to deal with these problems, while maintaining a sustainable rate of overall growth and

making continued progress in moderating inflation. This chapter begins with a summary of the *Report.*

## THE MACROECONOMIC SETTING

The broad economic forces that shape the overall performance of the U.S. economy and of its major sectors are the focus of Chapter 1. This chapter first reviews the main economic developments of 1986 in the context of the current expansion and in comparison with past expansions and with economic performance in other countries. This leads to an examination of the main forces that have influenced the performance and current problems of important sectors of the U.S. economy.

Wide swings in relative product prices are among these forces. The oil and gas industry and agriculture benefited from increases in the relative prices of their products in the 1970s, and have suffered as these relative prices declined in the 1980s. The problems of many trade-sensitive industries are directly related to the 28 percent decline in the relative price of imports between 1980 and 1986 and to the downward pressure of a strong dollar on the relative price of U.S. exports. On the positive side, lower relative prices of oil, agricultural products, and imports have benefited consumers. Also, a declining relative price of capital goods during this expansion has permitted strong growth of real investment without a corresponding drain on national saving.

Another critical factor influencing sectoral problems and structural change is the wide swing in real interest rates and real asset values that occurred in the 1970s and 1980s. During the period of rising inflation in the 1970s, real interest rates—the difference between nominal interest rates and anticipated inflation rates—were low and sometimes even negative. Borrowers benefited from low real borrowing costs and real values of tangible assets rose, while holders of fixed-interest rate instruments and equities experienced real capital losses. As often happens during periods of disinflation, during the 1980s real interest rates have been high by postwar standards. Borrowers have often suffered, while holders of financial assets including equities have enjoyed large gains that have contributed to substantial increases in real household net worth.

Differential productivity growth also drives important structural changes. Since 1981, productivity growth in manufacturing has accelerated above the postwar trend, while productivity growth in the service sector has remained sluggish. These differential rates of productivity growth, together with the relative constancy of the share of manufacturing output in real GNP, have induced a decline in the

share of manufacturing in total employment—a development that might be less decried if its underlying causes were better understood.

Advancing technology and wide swings in interest rates and inflation rates, together with financial deregulation, have contributed to structural change in the banking and financial services industry and to instability in the relationship between money growth and nominal income growth. This instability has complicated the conduct of monetary policy in its dual tasks of restraining inflation and avoiding disruption of real economic growth.

The prospect of gradual resolution of the economy's structural and sectoral problems contributes to the forecast of stronger economic growth discussed at the end of this chapter. The growth rate of real GNP is projected to increase to 3.2 percent in 1987 and somewhat higher in 1988–89. Because of the wearing off of the temporary, inflation-reducing effects of the decline in oil prices and the delayed effects of dollar depreciation on import prices, the inflation rate is projected to rise moderately in 1987. Subsequently, the inflation rate should resume its decline, provided that the Federal Reserve continues to manage monetary policy in a manner consistent with sustainable real economic growth and with gradual reduction of the inflation rate toward the long-run goal of price stability.

### FISCAL POLICY

Chapter 2 examines two elements of fiscal policy, budget control and tax reform, that influence both the sectoral and overall performance of the U.S. economy. Better control of the Federal budget is required to reduce the Federal deficit, primarily by reducing the share of Federal spending in GNP. Realization of the long-run benefits of the Tax Reform Act of 1986 is one of the many important reasons for pursuing this approach to deficit reduction. This Act improves overall incentives for economic activity and reduces disparities in rates of taxation on different forms of economic activity. In the long run, after the transition problems of some sectors are resolved, this Act is estimated to increase net national product by approximately 2 percent. Evaluated at current levels of national income and product, this implies approximately a $600 gain in the annual income of the average American family, without any loss of Federal revenue.

### INTERNATIONAL IMBALANCES

Chapter 3 demonstrates that the large U.S. trade deficit is primarily a macroeconomic phenomenon. This phenomenon is fundamentally related to the rapid growth of domestic demand in the United States relative to the growth of U.S. output and relative to demand and output growth in the rest of the world. It is also related to the

appreciation of the U.S. dollar between 1980 and 1985, which reduced the international competitiveness of U.S.-produced goods and services. And it is related to the deterioration of the U.S. national saving-investment balance, which reflects not abnormal behavior of the private saving-investment balance, but rather the persistence of a large Federal deficit late into the current expansion.

Stronger internally generated growth in other industrial countries, reduction of the Federal deficit through spending restraint, and policy reforms that encourage growth and restore credit worthiness in developing countries are critical elements in the global strategy to reduce international trade imbalances. Stronger internally generated growth in foreign countries is essential to maintain satisfactory rates of real growth in the world economy. This is especially important during a period when the growth of domestic demand is slowing in the United States and when improvements in the relative competitive position of U.S. tradable goods industries are shifting world demand toward U.S. products. International coordination of economic policies, especially among the leading industrial countries, can help to ensure that payments imbalances decline in an environment of greater exchange-rate stability and sustainable, noninflationary growth in the world economy.

### FREE AND FAIR TRADE

Protectionism is a false solution to the U.S. trade imbalance. However justified are the claims of unfair trade practices by other countries, the massive deterioration of the U.S. trade balance clearly has not occurred primarily because foreign trade practices have become vastly more unfair. Moreover, starting a world trade war by resorting to protectionism would be especially imprudent at a time when the improving competitiveness of U.S. industries appears likely to bring significant expansion of U.S. exports.

As is discussed in Chapter 4, the Administration's policy of free and fair trade is to avoid protectionism at home while opening markets to U.S. products abroad. This policy fits well with the broader strategy of reversing the tide of macroeconomic forces principally responsible for the deterioration of the U.S. trade balance. Administration efforts to improve market access have brought significant results in bilateral negotiations with Japan on sector-specific trade problems and in cases initiated by the Administration against unfair foreign trade practices under Section 301 of the Trade Act of 1974.

Major initiatives to extend the Administration's trade policy include bilateral discussions with Canada to move toward a free-trade area and the new round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT). The agreed pur-

pose of the new GATT round is to secure a standstill or rollback of existing protectionist policies, to improve GATT procedures for enforcing fair rules of international trade, and, most importantly, to enhance or extend GATT rules in areas of critical interest to the United States: trade in services, protection of intellectual property rights, rules governing international investment, and trade in agricultural products.

### REFORM OF AGRICULTURAL POLICIES

The problems of U.S. agriculture are the focus of Chapter 5. Government policies have directly or indirectly subsidized agricultural production in the United States and in many other industrial countries. These policies have stimulated excess production that has depressed agricultural product prices in world markets. Government intervention has wasted resources by encouraging farmers to incur costs in order to produce commodities for which only the government provides a market. Much of the money spent on agricultural support programs has been dissipated in outright waste or delivered to owners of large farms that invariably receive the largest subsidy payments.

The solution is to reform agricultural programs by gradually decoupling farm income support from farm production and linking it to financial need. Simultaneous reform of agricultural policies in the United States, the European Community, and Japan would reduce the economic waste and budgetary cost of agricultural support programs for all countries.

### RISK, REGULATION, AND SAFETY

Regulation is another mechanism through which the government influences the performance of different sectors of the economy and broader aspects of individual behavior. Chapter 6 discusses examples of excessive and inappropriate regulations that unduly limit individual choice, raise costs, and discourage economic activity. In some cases, regulations even work against their intended purposes. Rigid rules, such as some designed to reduce workplace hazards, can reduce production and employment opportunities without a corresponding gain in occupational safety. In this and other areas where government intervention may be indicated, the costs of regulations should be weighed against their likely benefits. Reliance on personal responsibility and market incentives often provides the best methods for reducing risk.

### WOMEN IN THE LABOR FORCE

The final chapter of this *Report* examines one of the most important structural changes in the U.S. economy—increasing participation

of women in the labor force. Over the past decade, women have accounted for 62 percent of total labor force growth. Increasing labor force participation of women has not led to large increases in unemployment rates for either men or women, and has made an important contribution to growth of real per capita income. Because many women now plan longer careers and acquire the requisite education, experience and skills, wages of women relative to those of men have been rising in the 1980s. These developments testify to the flexibility of U.S. labor markets and to the capacity of the market-oriented U.S. economy to generate productive and rewarding jobs for an expanding labor force.

## THE U.S. ECONOMY IN 1986

Economic growth proceeded at a moderate pace in 1986, while significant declines were recorded in both the inflation rate and interest rates. Between the fourth quarter of 1985 and the fourth quarter of 1986 (preliminary estimate), real GNP rose by 2.2 percent. While the unemployment rate declined by only 0.3 of a percentage point during the year and remained relatively high by postwar standards, the employment-population ratio for persons over 16 years of age reached a new postwar peak of 61.3 percent at the end of 1986. Given the impact of declining oil prices, the inflation rate, measured by the consumer price index (CPI), turned negative in the first quarter. Over the entire year, the CPI rose by only 1.1 percent, the lowest inflation rate in more than 20 years. Nominal interest rates fell sharply early in the year and by yearend were near their lowest levels for the year and since 1977.

### COMPONENTS OF DEMAND

On the demand side, real GNP may be decomposed into real consumption spending, real investment spending, real government spending, and real net exports. Strong growth of real consumption spending was the driving force behind demand growth for most of 1986. Real consumption spending rose at a 4.0 percent annual rate in 1986, fourth quarter to fourth quarter.

After rising nearly $14 billion in the fourth quarter of 1985, real nonresidential fixed investment declined by $19 billion in the first quarter of 1986 and then fell an additional $6.8 billion in the next three quarters. Real residential investment grew strongly, recording a 9.8 percent increase during the year. The continuing congressional debate over tax reform and final passage of the Tax Reform Act of 1986, together with the effect of lower oil prices on the domestic energy industry, apparently affected the pace and pattern of invest-

ment spending in 1986. Anticipated repeal of the investment tax credit, with an effective date of January 1, 1986, may have contributed to the sharp rise in real nonresidential fixed investment in the fourth quarter of 1985 and to its decline in the first quarter of 1986. The likelihood of an increase in business taxes and uncertainty about the final shape of tax reform may have helped to depress this category of real investment spending for the remainder of 1986. Lower mortgage interest rates contributed to strong growth of residential investment during 1986.

Real purchases by State and local governments grew 4.6 percent during 1986. Real Federal purchases followed a somewhat erratic path primarily because of fluctuations in defense purchases and purchases by the Commodity Credit Corporation, and ended the year 1.8 percent above their level in the fourth quarter of 1985. Overall, growth of real government purchases contributed 0.7 percent to real GNP growth in 1986.

Real net exports of goods and services improved by $6.1 billion in the first quarter of 1986, and then declined by $28 billion in the second quarter and by a further $9.4 billion in the third quarter, before recovering by $7.7 billion in the fourth quarter. Net exports in nominal terms showed much less deterioration during 1986 than real net exports. Specifically, between the fourth quarter of 1985 and the third quarter of 1986, real net exports declined by $31.3 billion of 1982 dollars, while nominal net exports declined by only $3.6 billion of current dollars. The reason for this difference is the low relative price of imports and the further decline in this relative price during 1986, attributable primarily to the decline in the price of imported oil.

### THE OIL PRICE DECLINE

Probably the most important special factor affecting the U.S. economy in 1986 was the sharp drop in world oil prices, which was promptly reflected in domestic oil prices. Between November 1985 and April 1986, the spot price of West Texas Crude fell from $30.90 to $13.75 per barrel. A further $2.45 per barrel decline in domestic oil prices occurred between April and July, before prices recovered to $17.60 per barrel in December. The sharp decline in oil prices had pronounced adverse effects on the domestic oil and gas industry. Real investment in this industry declined by more than $10 billion in the first half of 1986, accounting for more than half of the decline in real business fixed investment. Employment in the domestic oil and gas industry fell by nearly 150,000, mainly in the first half. Further employment losses occurred in regions heavily dependent on the oil and gas industry.

For the rest of the economy, the decline in oil and gas prices had important beneficial effects. The CPI fell at an annual rate of 4.3 percent between January and April, the first significant decline in this index since 1954. The decline in consumer prices was clearly attributable to lower oil and gas prices, because the CPI excluding energy rose at an annual rate of 2.9 percent between January and April. The decline in consumer prices contributed to strong gains in real disposable personal income that, in turn, fueled the strong growth of consumer spending, which was the mainstay of overall economic growth.

The fall in oil prices, inflation, and inflationary expectations also played a critical role in the sharp decline in nominal interest rates. Interest rates on 10-year Treasury securities fell from 9.26 percent in December 1985 to 7.30 percent in April 1986, and declined a further 19 basis points by yearend. Interest rates on 91-day Treasury bills fell somewhat less, moving down from 7.10 percent in December 1985 to 6.06 percent by April 1986 and to 5.53 percent by yearend. The sharp decline of interest rates spread rapidly to mortgage interest rates.

Assuming no further substantial change in domestic oil prices, most of the negative effects of lower oil prices have probably been absorbed, while the beneficial effects are yet to be fully realized. Lower energy costs will contribute to lower production costs in many important domestic industries. Productivity growth may be enhanced in the long run as firms adopt more efficient energy-using technologies, partially reversing the adverse productivity effects of higher energy prices in the 1970s.

### SECTORAL PERFORMANCE

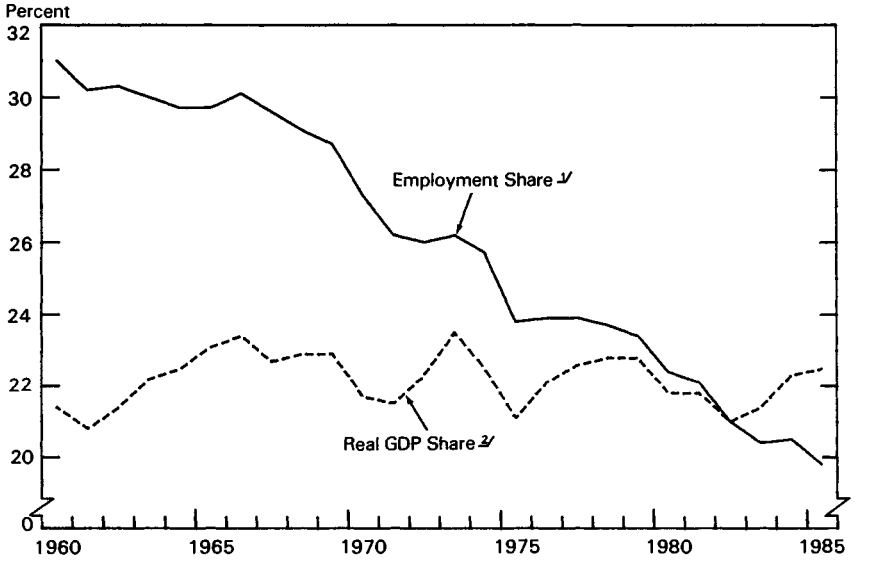
The effects of economic advance were widespread across industries and regions. Output expanded at about the same rate in goods-producing and service-producing industries. Industrial production data show increases in output in 18 of the 28 major industries for which results are reported. Because of strong productivity gains in manufacturing industries, however, employment increases were concentrated primarily in service-producing industries.

The relative constancy of the share of manufacturing in total output, combined with a declining share of manufacturing in total employment, is a longstanding phenomenon. It does not reflect a long-term weakness in the growth of output of manufacturing industries relative to the total economy. Rather, it reflects the general tendency (discussed later in this chapter) for labor productivity growth in manufacturing to exceed labor productivity growth for the rest of nonfarm business.

For analytical purposes, this phenomenon is most appropriately assessed by comparing the behavior of the ratio of value added in manufacturing to real nonagricultural gross domestic product (GDP) with the ratio of manufacturing employment to nonfarm employment, as illustrated in Chart 1-1. Data for value added by industry, which are available annually through 1985, were used to construct the chart. Data on final expenditure by sector, which are available quarterly through 1986, confirm the general relationship illustrated in Chart 1-1. Specifically, in 1986, when labor productivity growth in manufacturing remained substantially above that in total nonfarm business, the share of final expenditures on goods output (which are dominated by manufacturing) remained essentially constant, while the share of manufacturing in nonfarm employment continued to decline.

Chart 1-1

Manufacturing Shares in Real GDP and Employment



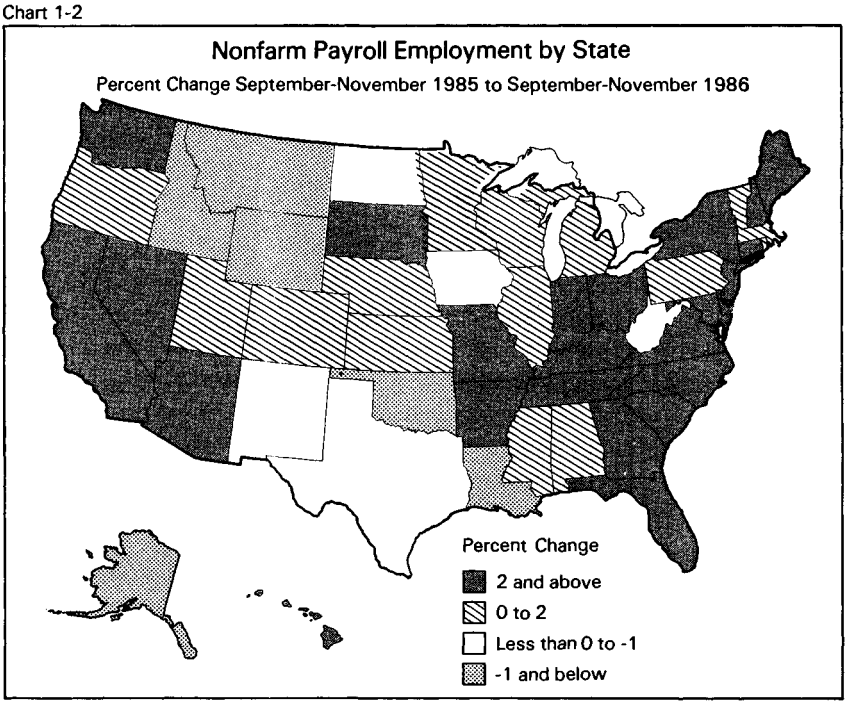

1/Manufacturing as percent of nonfarm payroll employment.
2/Manufacturing as percent of real gross domestic product less agriculture, forestry, and fisheries.
Sources: Department of Commerce and Department of Labor.

## REGIONAL DEVELOPMENTS

While GNP data are not available on a regional basis, data on employment by State provide a reasonably good impression of the regional economic performance of nonagricultural business. The re-

gional pattern of employment gains for 1986 is illustrated in Chart 1-2. The chart is constructed using data from the establishment survey on employment in nonfarm business by State. The change in employment from the same month a year ago is used to control for seasonal factors, and the results for the 3 most recent months for which data are available (September, October, and November) are averaged in order to limit the effects of sampling error.

Chart 1-2




Source: Department of Labor.

In 39 States and the District of Columbia, increases in employment were recorded for the period covered by Chart 1-2. In 36 States, employment increased by at least 1 percent, and in 24 States, employment increased by at least 2 percent. In 11 States, employment fell and in 6 States the decline in employment exceeded 1 percent. Not surprisingly, States where the oil and gas industry is important, Alaska, Louisiana, Oklahoma, Texas, and Wyoming, are among those that recorded significant employment losses. If Chart 1-2 were extended to cover the period since the last cyclical peak (July 1981 to November 1986), employment gains would be shown in all but 5 States. Employment gains of 10 percent or more would be shown in

24 States and gains exceeding 5 percent would be shown in 40 States.

Widespread employment gains across most of the country do not imply an absence of economic problems in some industries and regions. Agriculture, mining, the oil and gas industry, and other trade-sensitive industries have experienced problems for some time, and particularly for the oil and gas industry, these problems have recently deepened. In areas heavily dependent on declining firms and industries, economic problems have spread to the support and service industries. However, assertions that the United States is becoming a "bicoastal economy" with broad areas of economic depression across the Nation's midsection, are greatly exaggerated. Economic progress has been widespread. Remaining economic problems tend to be concentrated in particular industries and in specific areas of the country.

## THIS EXPANSION IN THE POSTWAR CONTEXT

The performance of the U.S. economy in 1986 should be assessed in the broader context of the current expansion, in comparison with economic performance in other industrial countries, and with earlier postwar expansions in the United States. Viewed in this context, it is important to note that despite a moderate pace of overall growth since mid-1984 and continuing problems in some sectors, steady progress has been made in reducing inflation and interest rates. The foundation for sustainable real economic growth, with continued moderate inflation, has been strengthened.

In other leading industrial countries, substantial progress has also been made in reducing the rate of inflation during the 1980s. As is discussed in Chapter 3, however, other industrial countries have generally recovered less strongly from the worldwide recession of the early 1980s than has the United States. This is especially the case when recovery is calibrated in terms of growth of real domestic demand, which measures total real spending by the residents and government of a country. Moreover, the deterioration of U.S. real net exports during the current expansion contributed significantly to economic growth in other countries, while limiting real GNP growth in the United States. In contrast, during earlier postwar expansions, growth rates of real GNP in most other industrial and in many developing countries typically exceeded the U.S. growth rate.

Comparison of unemployment rates in the United States and Western Europe dramatically illustrates the relative strength of U.S. economic performance during the current expansion. At 6.6 percent, the total U.S. unemployment rate remains relatively high by postwar standards, but is well down from its cyclical peak of 10.7 percent in December 1982. In Western Europe, unemployment rates typically

ran well below U.S. rates during the 1960s and 1970s. During the 1980s, despite recovery from the recession of 1980–82, the average unemployment rate in the major countries of the European Community has risen persistently, reaching 12 percent in early 1986.

The situation in the U.S. economy today should also be compared with that prevailing at similar stages of earlier postwar expansions. In the later stages of the long expansion of the 1960s, real growth remained strong. However, after the slowdown in 1967, the inflation rate and interest rates (although still low by recent standards) resumed their upward movement. Tightening of monetary and fiscal policy undertaken to curb rising inflation at the end of the expansion of the 1960s probably contributed to the recession of 1969–70. The expansion that began in 1970 was barely a year old when rising inflation and a deteriorating balance of payments led to the imposition of price and wage controls and to devaluation of the dollar. With the removal of controls, the inflation rate and interest rates rose in 1973, exacerbated at the end by the surge in world oil prices. Shortly thereafter, the economy collapsed into one of the deepest recessions of the postwar period.

In the recovery from the 1974-75 recession, the inflation rate and interest rates continued on a downward path for the first six quarters of the expansion, and short-term interest rates kept falling for an additional two quarters. However, by the fourth year of the expansion (comparable to 1986 during the current expansion), the inflation rate and short-term interest rates were more than 3 percentage points above their minimum levels for the expansion, and this was before the second oil price shock (in early 1979) contributed to a further upsurge of inflation and interest rates.

This expansion ended in a double crescendo of rising inflation and interest rates and falling economic activity. The tightening of monetary policy in late 1979 and early 1980 and the brief recession in 1980 brought only temporary respite from high inflation and interest rates at the cost of a sharp rise in unemployment. Following the reacceleration of monetary growth in mid-1980, the inflation rate and interest rates rose to new peaks in 1981, while economic activity collapsed into a deep recession.

Fortunately, the cure applied in 1981 proved more enduring, even if more painful, than that attempted and aborted in 1980. Average annual real GNP growth during the first 4 years of the current expansion has been 0.7 of a percentage point below that for the 4 years from 1975 to 1979 (4.0 versus 4.7 percent). However, the inflation rate and interest rates have continued to decline during the current expansion, in contrast with behavior in the late 1970s. Currently, there are

no signs of the developments associated with the unfortunate conclusions of earlier expansions. The destructive sequence of business cycles with progressively rising inflation rates and interest rates, punctuated by severe recessions, has been broken. With appropriate macroeconomic policies, the U.S. economy need not suffer, once again, the painful process of wringing entrenched inflation out of the economic system.

## RELATIVE PRICES AND STRUCTURAL CHANGE

The 1970s and 1980s saw not only wide swings in the overall rate of price inflation, but also dramatic movements in relative prices among important sectors of the economy. Such relative price movements are generally associated with important structural changes and with adjustment problems for particular sectors of the economy. Sectors experiencing relative price increases usually enjoy rapidly growing output and employment with rising incomes and asset values, while sectors facing relative price declines often suffer stagnating output and employment with falling incomes and asset values.

Movements in relative prices for several important sectors of the U.S. economy over the past 30 years are illustrated in Chart 1–3. For each sector, the relative price is the ratio of that sector's implicit price deflator to the implicit price deflator for total GNP. The important message conveyed by Chart 1–3 is that relative price movements have been much larger in the 1970s and 1980s than they typically were between 1955 and 1970.

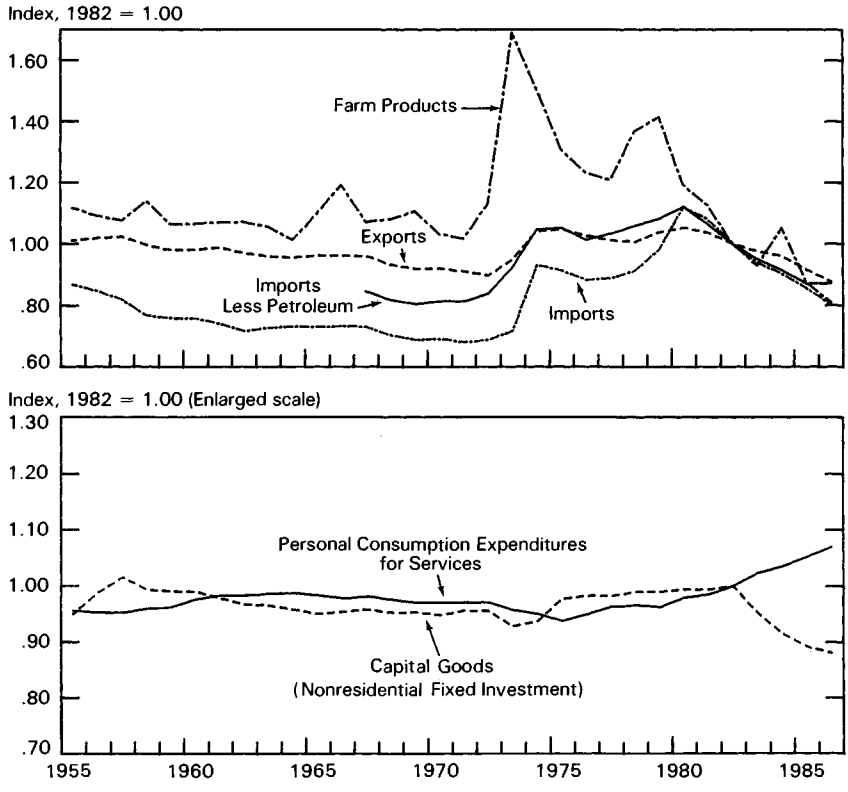
### RELATIVE FARM PRODUCT PRICES

After 15 years of modest fluctuations, the relative price of farm products rose sharply in the early 1970s, declined substantially in the mid-1970s, and then rose again until 1979, as shown in Chart 1–3 (top panel). Since 1979, the relative price of farm products has been on a declining path, and in 1986 was below the 1955–70 average. These movements in the relative price of farm products in the United States were correlated with similar relative price movements in world markets.

The rise in the relative price of farm products in the 1970s was associated with substantial gains in real farm incomes and large increases in the real value of farmland. This development encouraged large-scale and sometimes excessive borrowing to finance purchases of farm equipment and farmland. With the decline of the relative price of farm products in the 1980s, however, farm incomes and land values fell. Many farmers who borrowed heavily in the late 1970s

Chart 1-3

Relative Price Movements




Note.—Ratio of component implicit price deflator to GNP implicit price deflator.

Sources: Department of Commerce and Council of Economic Advisers.

with the expectation of rising farm incomes and land values have experienced severe economic difficulties. The role of government policy in creating these problems, and in correcting them, is discussed in Chapter 5.

RELATIVE IMPORT AND EXPORT PRICES

Movements in the relative price of products imported into and exported from the United States followed a pattern broadly similar to that of farm products. The relative prices of imports and exports were quite stable during the late 1950s and the 1960s, before rising sharply in the early 1970s. After declining moderately between 1974

and 1976, the relative prices of imports and exports rose again in the late 1970s. Since 1980, the relative prices of imports and exports have been declining and relative export prices are now near levels typical of the period around 1960.

Increases in the relative price of imported oil contributed significantly to the sharp rise in the relative price of all imports in 1973–74 and again in 1979–80. However, movements in the relative price of imported oil do not account for all of the movement in relative import prices; the same general pattern is observed in the relative price of non-oil imports (also shown in the top panel of Chart 1–3). An important exception is that the relative price of non-oil imports started to rise modestly in 1986, but the sharp decline in the price of imported oil caused the relative price of total imports to continue to decline.

As is discussed further in Chapter 3, movements in the relative prices of both imports and exports have tended to mirror movements in the real foreign exchange value of the U.S. dollar. The depreciation of the dollar in 1971 and especially in 1973 contributed to increases in the relative price of imports and eased the competitive situation of U.S. exporters relative to their foreign rivals. The very weak dollar in the late 1970s and 1980 had similar effects. In contrast, the strong real appreciation of the dollar between 1980 and early 1985 was associated with a sharp decline in relative import prices and placed U.S. exporters under severe pressure vis-a-vis foreign competitors. The substantial decline in the real foreign exchange value of the dollar that started in early 1985 began to be reflected in a higher relative price of non-oil imports only in 1986, and is not yet clearly apparent in relative export prices. This may be partly because relative import and export prices never fully reflected the very high dollar, as well as because of longer than normal delays in the adjustment of relative goods prices to a lower dollar.

### RELATIVE CAPITAL GOODS PRICES

After 25 years of only very modest movements (Chart 1–3, bottom panel), the relative price of capital goods (nonresidential fixed investment) fell by 12 percent between 1982 and 1986. This decline is probably related to the same forces that depressed the relative prices of many manufactured goods, especially those linked strongly to international trade. The decline in the relative price of capital goods made possible very strong growth of real business fixed investment during the current expansion without correspondingly strong growth of demand for investment financing. Specifically, between the fourth quarter of 1982 and the fourth quarter of 1985, the ratio of real business fixed investment to real GNP rose from 11.2 percent to a post-

war peak of 13.2 percent. Over this period, the share of nominal spending on business fixed investment rose from 11.0 to only 11.6 percent. Thus, the decline in the relative price of capital goods allowed the share of real business fixed investment spending in real GNP to rise by 2 percentage points, while the share of such spending in nominal GNP rose by only 0.6 of a percentage point.

The lower relative prices of capital goods presumably made investment spending more attractive by reducing the cost of acquiring productive assets. This contributed to the strong growth of real investment during the current expansion. As is discussed in Chapter 3, the decline in the cost of capital goods allowed a given increase in real investment to be financed with a smaller drain on national saving and hence a smaller demand for foreign borrowing than would otherwise have been the case.

### EFFECTS OF RELATIVE PRICE CHANGES

In assessing the effects of relative price changes, it is important to remember that the weighted average of the relative prices of all the components of GNP or of total domestic spending is always constant. If the relative prices of some components increase, this must be offset by declines in the relative prices of other components. In particular, as is shown in Chart 1–3, the relative price of services (which constitute about one-third of GNP and of total domestic spending) generally moves in the opposite direction from the other relative prices (which refer to components of smaller magnitude). This relationship is especially apparent in the 1980s, when all of the other relative prices in this chart are declining.

The economic fortunes of particular industries have been strongly influenced by movements in their own relative prices. Agriculture did very well when the relative price of farm products and farm exports rose in the 1970s, and has suffered with their decline in the 1980s. The domestic oil and gas industry boomed during the period of high relative oil prices, and has experienced severe difficulties since the recent sharp decline in oil prices. Consumers of food and energy have been on the other side, losing during the period of rising relative prices of these products in the 1970s, and gaining during the period of falling relative prices in the 1980s.

A similar story applies generally for many U.S. manufacturing industries that must compete with imports of foreign products at home or that seek to export their products to foreign markets. Under the shelter of the weak dollar and high relative import prices in the 1970s, many of these industries prospered. Despite sluggish productivity growth in many manufacturing industries, output, employment, and exports of many manufacturing industries expanded substantially

in the 1970s. This situation reversed during the period of the strong dollar and declining relative import and export prices in the 1980s. Many U.S. manufacturing industries came under heavy pressure from foreign competitors in both domestic and foreign markets, despite an acceleration of productivity growth. Consumers of manufactured products, of course, suffered from higher prices of these products than probably would have prevailed if the dollar had remained stronger in the 1970s. Consumers have recently benefited from significantly lower relative prices of these products supplied by both foreign and domestic producers.

Although movements of relative prices are often associated with problems of particular industries, they play an essential role in the effective and efficient functioning of the economic system. When real economic conditions change because of changes in taste or technology or the availability of productive resources, relative price changes signal the need to alter patterns of consumption and production. However, wide swings in relative prices that are associated with the process of inflation and disinflation generate significant problems not only for individual industries, but also for the economy as a whole. To attempt to restrain relative price movements by any direct means is no solution. Such attempts often generate surpluses or shortages of products whose relative prices are controlled. They injure the economy by limiting its flexibility to respond to economic and technological change. In the end, they create worse problems than they resolve. The solution to the excessive and unnecessary volatility of relative prices generally associated with inflation and disinflation is to avoid the macroeconomic policies that contribute to inflation and to the subsequent need to disinflate.

## REAL INTEREST RATES, NET WORTH, AND SAVING

In addition to wide swings in relative goods prices, the past 15 years have witnessed substantial movements in real asset values and rates of return. Anticipated real rates of return are important factors in decisions about borrowing and lending and about saving and investing. Wide swings in the real values of assets strongly influence real household net worth and therefore consumption and saving as well. The causes and effects of these movements in real interest rates and real asset values need to be understood within the context of the process of inflation and disinflation that has dominated economic events since the late 1960s.

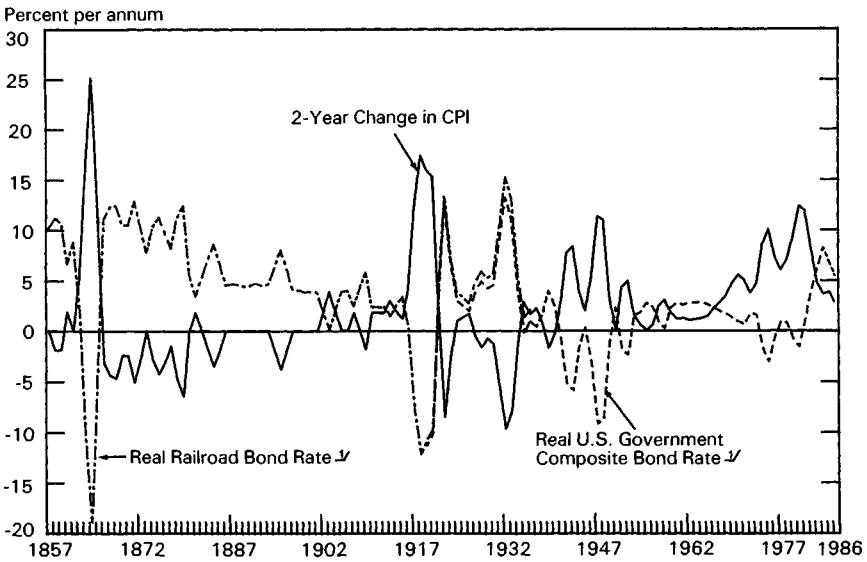
The real rate of interest on a loan or security is the nominal interest rate less the inflation rate realized over the life of the loan or security. Thus the real rate of interest is the return paid by borrowers to lenders, measured in real goods and services. The ex ante real interest rate is the nominal rate of interest on the loan or security minus the rate of inflation that is anticipated when the loan is made or the security is purchased. Ex ante real interest rates, however, are often difficult to measure because of the lack of reliable and consistent information about expected inflation. A useful proxy measure of ex ante real interest rates can be constructed by assuming that the anticipated rate of future inflation corresponds reasonably closely to recent past rates of inflation. This proxy measure of ex ante real interest rates is probably most reliable during periods when the actual inflation rate is stable, and anticipated rates of future inflation are likely to correspond reasonably closely to recent past inflation rates.

The long-run behavior of this proxy measure of ex ante real interest rates is illustrated in Chart 1–4. The yield on railroad bonds is used to measure nominal interest rates from 1857 to 1936, augmented by a composite of long-term government bond yields since 1919. The annualized rate of increase in the CPI over the preceding 2 years is subtracted from these nominal interest rates to construct the proxy measure of the real interest rate. The CPI for early years is not completely comparable with the index used today, but this is not likely to affect seriously the main results discussed below. For the past two decades, the behavior of the proxy measure of real interest rates depicted in Chart 1–4 is broadly consistent with that shown by other measures of real interest rates.

The real interest rate on long-term government bonds shown in Chart 1–4 was in the range of 2 percent during the 1960s before declining, sometimes to negative levels, in the middle and late 1970s. Starting in 1981, real interest rates rose substantially above the levels of the 1960s; the proxy measure shown in Chart 1–4 reached a peak of 8.25 percent in 1984. Although high by postwar standards, the level of real interest rates in the 1980s is not unprecedented over a longer historical period. Over the period since 1857, the proxy real long-term rate shown in Chart 1–4 averaged 3.11 percent; in the 1982-86 period, it averaged 6.13 percent. However, during a prolonged period in the late 1800s, real long-term rates were higher than in the 1980s; during the 15-year period ending in 1880, the real rate on railroad bonds shown in the chart averaged 10.44 percent. Since 1900, there have been two periods (in the early 1920s and again in the early 1930s) when real rates rose to levels as high as in the early 1980s. There have also been several periods when the

Chart 1-4

Proxy Measure of Real Long-Term Interest Rates




1/ Nominal yield minus the average annual percent change in the consumer price index over the preceding 2 years.

Sources: Department of Commerce, Department of Labor, and Department of the Treasury.

proxy measure of real interest rates was significantly negative, as occurred in the 1970s.

High real interest rates in the second half of the 19th century are sometimes attributed to the rapid growth in the U.S. economy and high prospective rates of return on investment that attracted capital from overseas to finance the industrial boom. Similarly, the rise in real interest rates in the early 1980s has been attributed to an improved climate for capital investment in the United States, resulting from the business tax cuts enacted in 1981, the decline in the inflation rate, and strong real economic growth early in the expansion.

Other explanations relate high real rates in the early 1980s to the emergence of large actual and prospective budget deficits and to a shift to disinflationary monetary policy. Although most analysts agree on the direction of the influence of budget deficits on interest rates, the evidence of the strength of that influence is by no means unambiguous. The budget deficit increased in 1980 and 1981, but very large budget deficits did not emerge until 1982, after much of the

apparent rise in real interest rates had taken place. The increase in real interest rates before 1982, therefore, would need to be related to expectations of large future budget deficits.

It is plausible that restrictive monetary policy contributed to higher real interest rates in 1980–82 and perhaps again in the second half of 1984. However, given rapid monetary growth over most of the expansion, it is difficult to see restrictive monetary policy as the persistent and predominant cause of high real interest rates (except insofar as monetary policy has continued to contribute to the moderation of inflation). Moreover, the rising stock market and the boom in investment spending since 1982 are somewhat difficult to reconcile with large budget deficits or disinflationary monetary policy as the exclusive explanations of high real interest rates.

One apparent regularity in the behavior of the proxy measure of real interest rates illustrated in Chart 1–4 is the strong inverse relationship between movements in the real interest rate and movements in the inflation rate. During periods of rapidly changing inflation rates, expectations of future inflation may differ substantially from recent past inflation. Hence, caution is called for in interpreting measures of the ex ante real rate such as those shown in Chart 1–4. Recognizing this limitation, it is nevertheless the case that since 1857, all periods of high or rising inflation, including the middle and late 1970s, were associated with sharp declines in the proxy measure of the real interest rate. During all periods of sharply declining inflation or deflation, including the early 1920s, the early 1930s, and the early 1980s, the real interest rate turns strongly positive. When placed in a longer historical context, neither the negative real interest rates in the 1970s nor the rise of real interest rates in the 1980s is particularly unusual, given the sharp movements in the inflation rate that were also occurring. Although many factors have probably contributed to movements of real interest rates in the past decade, the evidence suggests that these movements are consistent with past experience and should be viewed as normal concomitants of the process of inflation and disinflation.

*Adjustment of Inflation Expectations*

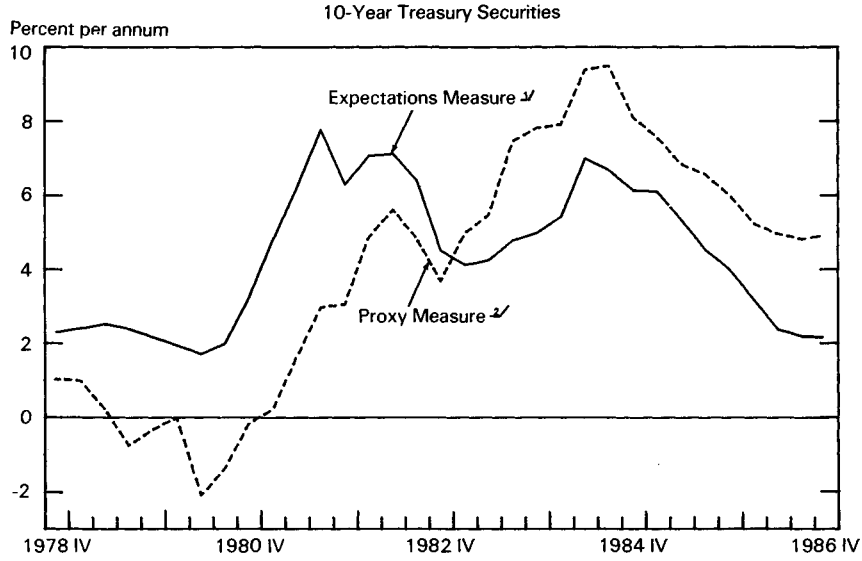
The relationship between changes in the inflation rate and the proxy measure of the real interest rate is consistent with a lag in the adjustment of inflation expectations behind the actual inflation rate. The potential effect of this adjustment lag is illustrated in Chart 1–5, which compares two measures of the ex ante real long-term interest rate during the past 8 years. The "proxy measure" is constructed by subtracting the annual rate of change in the CPI over the preceding 2 years from the nominal yield on 10-year Treasury securities. The "expectations measure" is calculated by subtracting from the same

nominal yield a measure of 10-year inflationary expectations taken from a survey of financial experts. Both measures of the ex ante real interest rate in Chart 1-5 indicate that long-term real interest rates rose sharply in the early 1980s and that real long-term interest rates have been declining since 1984.

Chart 1-5

Ex Ante Real Long-Term Interest Rates

10-Year Treasury Securities




1/ The expectations measure is the yield on 10-year Treasury securities (constant maturity) minus 10-year inflation expectations from the Decision-Makers Poll by Richard B. Hoey, Drexel Burnham Lambert, Inc.

2/ The proxy measure is the yield on 10-year Treasury securities (constant maturity) minus the average annual percent change in the consumer price index over the preceding 8 quarters.

Sources: Department of the Treasury and Department of Labor, except as noted.

The relative movement in the two measures of the ex ante interest rate indicates a lag in the adjustment of long-term inflation expectations to actual inflation rates. During the period of high inflation and even 2 years after the inflation rate began to fall, the long-term expected inflation rate remained below the 2-year moving average of the CPI. Accordingly, through 1982 the expectations measure of the real interest rate remained above the measure based on actual inflation. Long-term inflationary expectations began declining in 1981; but because of the lag in the adjustment of such expectations, they fell less rapidly than the 2-year moving average of the CPI. Since 1982, the expected inflation rate has been consistently above the 2-year average actual inflation rate. Accordingly, after 1982, the proxy measure of the real interest rate is above the expectations measure.

Thus, the divergence of the two measures of ex ante real interest rates depicted in Chart 1–5 reflects the failure of inflation expectations to adjust quickly both to the rise in actual inflation in the 1970s and to its subsequent decline in the 1980s.

The lag in the adjustment of inflationary expectations helps to explain why nominal interest rates remain relatively high in comparison with actual inflation rates during periods of disinflation, and why nominal interest rates tend to decline only gradually with the persistence of lower actual inflation rates. Borrowers and lenders who continue to anticipate relatively high future inflation rates agree to loans with nominal interest rates that reflect these expectations, rather than lower actual rates of current inflation. As evidence of lower inflation accumulates, inflation expectations are revised downward, and this translates into lower nominal interest rates.

The steady and substantial decline since mid-1984 in the real interest rates shown in Chart 1–5 reflects this process of the decline in nominal interest rates in the context of a gradual, albeit uneven, downward adjustment of inflation expectations. The expectations rate in Chart 1–5 remains considerably below the real interest rate measured with current inflation, reflecting the persistence of inflation expectations that exceed recent actual inflation. To a large extent, the difference between current and anticipated inflation in 1986 can be attributed to the effects of the oil price declines on current inflation, which are largely temporary. During the last 6 months of 1986, 10-year inflation expectations of 5 to 5¼ percent are apparently incorporated into nominal rates, which implies a 10-year anticipated real interest rate of just over 2 percent. This is generally consistent with the level of the proxy measure of the real long-term interest rate recorded in the 1960s.

*Consequences of Real Interest Rate Changes*

The wide swings in real interest rates associated with the inflation and disinflation of the past 15 years have had important, often adverse, effects on the economy and on the financial system. In the 1970s, when actual inflation accelerated ahead of what had been anticipated, lenders earned lower real rates of return than they had expected and suffered large capital losses as increases in nominal interest rates depressed the market value of existing fixed-rate securities. Borrowers generally benefited from paying lower (even negative) real interest rates than they had anticipated, and enjoyed capital gains from the reduced real value of their debts.

These wealth transfers between borrowers and lenders did not directly affect total wealth, but such arbitrary and unexpected redistributions may have interfered significantly with the efficient functioning of national and international credit markets. Lenders, having ex-

perienced losses, likely became less willing to extend credit unless compensated for the uncertainty about future inflation. The borrowers most willing to continue to borrow at higher nominal rates implicitly assumed continued high future inflation.

With disinflation in the 1980s, the situation of the 1970s was reversed. Borrowers experienced capital losses and lenders realized gains as the real cost of credit rose above what had been anticipated. When borrowers could not fulfill their obligations, lenders also faced losses. In many cases (including loans to energy producers, agriculture, and developing countries) debt problems were exacerbated by declining relative commodity prices associated with disinflation.

The general association of wide swings in real interest rates with the process of inflation and disinflation suggests that the high real interest rates and associated difficulties of the 1980s are intimately related to the inflation of the 1970s. In an environment of variable inflation, it is more difficult for the public to foresee accurately changes in the inflation rate. Hence, the public is likely to base lending, borrowing, saving, and investment decisions on information about future real rates of interest that turns out to be incorrect. The result is unanticipated capital gains and losses that can distort incentives to borrow and lend or save and invest. The prescription to diminish the likelihood of a recurrence of these problems is to avoid policies that contribute to a return of high inflation and therefore to the painful consequences of subsequent disinflation.

### REAL ASSET VALUES AND NET WORTH

Wide swings in real asset values have been another important counterpart of the process of inflation and disinflation. Generally, tangible assets such as farmland and owner-occupied housing that provide reasonably good hedges against inflation rose substantially in real value during the 1970s. During the 1980s, real farmland values have declined, and the real value of owner-occupied housing has leveled off. In contrast, the real value of financial claims against the productive assets used by nonfarm businesses (the real value of bonds and equities) declined during the period of rising inflation, and recovered strongly during the period of disinflation.

These swings in real asset values are reflected in the composition of household net worth, as reported in Table 1–1. Between the third quarter of 1965 (when the inflation rate was still under 2 percent) and the third quarter of 1978 (just before the second oil price shock and second surge of double-digit inflation), the ratio of household net worth to GNP declined from 321 percent to 290 percent. Among the components of net worth, the value of owner-occupied housing grew more rapidly than GNP, while the values of consumer durables,

noncorporate businesses (farm and nonfarm), pension fund and life insurance reserves, other financial assets, and total household liabilities maintained essentially constant ratios to GNP. Thus, the decline in the ratio of the value of household holdings of corporate equities to GNP more than accounted for the decline in the ratio of household net worth to GNP. Indeed, the real value of such holdings fell absolutely by $755 billion of 1982 dollars between the third quarters of 1965 and 1978.

TABLE 1-1.—*Real household assets and liabilities, 1965-86*

[Outstanding, end of period]

| Item | Level[1] (billions of 1982 dollars) | | | Percent of real GNP | | |
|---|---|---|---|---|---|---|
| | 1965 III | 1978 III | 1986 II | 1965 III | 1978 III | 1986 II |
| Total assets | 7,763 | 10,675 | 14,273 | 370 | 340 | 390 |
| Owner-occupied housing | 1,102 | 2,017 | 2,175 | 53 | 64 | 59 |
| Consumer durables | 685 | 1,091 | 1,261 | 33 | 35 | 34 |
| Other tangible assets | 436 | 955 | 1,197 | 21 | 30 | 33 |
| Total financial assets | 5,540 | 6,611 | 9,640 | 264 | 211 | 263 |
| Equity in noncorporate businesses: | | | | | | |
| Farm | 527 | 838 | 491 | 25 | 27 | 13 |
| Nonfarm | 805 | 1,169 | 1,625 | 38 | 37 | 44 |
| Corporate equities | 1,809 | 1,054 | 2,074 | 86 | 34 | 57 |
| Pensions and life insurance | 753 | 1,122 | 1,901 | 36 | 36 | 52 |
| Other financial assets | 1,647 | 2,428 | 3,550 | 79 | 77 | 97 |
| Total liabilities | 1,028 | 1,577 | 2,253 | 49 | 50 | 62 |
| Home mortgages | 618 | 954 | 1,335 | 29 | 30 | 36 |
| Installment and other consumer credit | 294 | 432 | 608 | 14 | 14 | 17 |
| Other liabilities | 116 | 191 | 310 | 6 | 6 | 8 |
| Household net worth | 6,735 | 9,098 | 12,021 | 321 | 290 | 328 |
| ADDENDUM: | | | | | | |
| Net Federal Government debt[2] | 627 | 670 | 1,317 | 30 | 21 | 36 |

[1] Deflated by GNP implicit price deflator.
[2] Debt of Federal Government held by the public less Federal debt held by the Federal Reserve System.
Note.—Data include households, personal trusts, and nonprofit institutions.
Sources: Department of Commerce (Bureau of Economic Analysis) and Board of Governors of the Federal Reserve System.

Next, consider the changes in net worth and its components between the third quarter of 1978 and the second quarter of 1986 (each the 14th quarter of its respective expansion). Real household net worth rose by $2.9 trillion of 1982 dollars in just under 8 years, exceeding its real gain during the 13 years between 1965 and 1978. The ratio of household net worth to GNP rose to 328 percent, more than recovering the ground lost between 1965 and 1978. Among the components, consumer durables maintained a constant ratio to GNP. The ratio of owner-occupied housing to GNP declined modestly, but remained above that recorded in 1965. The real value of equity in noncorporate farm business fell absolutely and as a share of GNP. Liabilities grew more rapidly than GNP, but so did total assets. The value of financial assets primarily representing claims on nonfarm business (equity in nonfarm noncorporate business, corporate equi-

ties, pension and life insurance reserves, and other financial assets) all grew significantly more rapidly than GNP. The combined increase in the real value of these financial assets exceeded the gain in real household net worth.

To some extent, gains in the real value of holdings of these financial assets reflected household saving and business retained earnings. However, a substantial part of these gains was due to increases in the real market value of existing financial claims against nonfarm business. These capital gains reflect substantial increases in the real value of the existing stock of productive capital employed by nonfarm business. Thus, the reversal of the earlier downward movement in the real value of claims on business enterprises played the key role in the recent growth of real household net worth and in the recovery of the ratio of net worth to GNP. As will be discussed below, this gain in real household net worth has implications for the recent behavior of household consumption and saving.

The nature and source of this gain also has potentially important implications for business investment. One prominent theory of business investment holds that when the market value of claims against existing businesses is high relative to the cost of new investment, there is a strong incentive for further business investment. According to this theory, therefore, the combination of strong gains in the real value of financial claims against nonfarm businesses with the recent low relative price of capital goods (discussed earlier in this chapter) implies the likelihood of renewed strength of business investment.

### DEBT AND SAVING

In the second quarter of 1986, the ratio of household debt to disposable personal income was at a postwar high of 86.2 percent. The ratio of total consumer debt to disposable personal income was also at a postwar high. Over the 4 years of the current expansion, the personal saving rate (the ratio of personal saving to disposable personal income) has averaged only 5.2 percent, versus a postwar average of 6.8 percent. In 1986, the personal saving rate was only 3.9 percent—the lowest personal saving rate since 1949. The concern is often expressed that with high levels of debt and low saving rates, households may not be able to sustain the growth of consumption spending that has been the mainstay of the current expansion. Even more worrisome, in the event of an economic downturn, households might be forced to cut back sharply on consumption, and difficulties might arise for the financial system if debtors could not meet their financial obligations in a timely manner.

Although these concerns have merit, especially for some heavily indebted households, their importance for the general economy should

not be exaggerated. Real household net worth—the excess of the real value of household assets over the real value of household liabilities—has been growing strongly. The current ratio of household net worth to GNP or to disposable personal income is high by the standards of the 1970s. For the aggregate of all U.S. households, increased borrowing over the past 8 years has, in effect, financed increased gross asset holdings, rather than increased consumption. For the reverse to be true, real household net worth would need to have fallen, rather than risen both absolutely and relative to GNP and disposable personal income. The fact that some of the growth of real household net worth has been accounted for by nonprofit institutions somewhat diminishes, but does not overturn, the force of this point.

In assessing saving behavior, it is important to take account of business saving from retained earnings and depreciation that is not counted as part of personal saving, but is part of private saving and of national saving. During this expansion, gross business saving has averaged 13.5 percent of GNP, exceeding the postwar average of 12.0 percent. The ratio of gross private saving (personal saving plus gross business saving) to GNP in this expansion, has averaged 17.3 percent, versus a postwar average of 16.7 percent.

Further, in assessing private saving behavior, it is important to take account of significant changes in real household net worth. Studies have shown that at a given level of disposable personal income, higher household net worth induces higher consumption spending. Alternatively, it might be that when households enjoy gains in net worth due to increases in the value of assets they already own, they decide to save less of their income. Either story fits reasonably well with the recent experience of large gains in real household net worth, strong growth of real consumption expenditures, and a low personal saving rate.

Some potential remains for further capital gains on existing productive assets. For example, the ratio of the New York Stock Exchange Common Stock Price Index to the GNP implicit price deflator increased 77 percent between 1982 and 1986, but is still below the peaks recorded in the 1960s. However, much of the recovery of real asset values, due to the decline in inflationary expectations and renewed optimism in future U.S. economic performance, may already have been realized. Moreover, in the 1950s and 1960s, when households enjoyed significant capital gains on equity holdings and the ratio of net worth to disposable personal income was as high as it is now, the personal saving rate was above levels recorded recently.

At some point, therefore, the measured rate of personal saving will probably need to rise above its 1986 level to maintain strong gains in real household net worth. This suggests that while growth of con-

sumer spending can continue to make significant contributions to total demand growth, at some point real consumer spending will need to grow less rapidly than real disposable personal income and real GNP. The economic projections discussed at the end of this chapter take account of these likely developments.

## PRODUCTIVITY GROWTH AND REAL PER CAPITA GNP

Productivity growth is the main determinant of the economy's long-run capacity to generate increases in real living standards, as measured by the growth of real per capita GNP. When labor productivity (output per hour) was growing at a relatively strong 2.8 percent annual rate between the cyclical peak in 1948 and the cyclical peak in 1973, real per capita GNP grew at a relatively strong 2.2 percent annual rate. However, as reported in Table 1–2, when the growth rate of labor productivity fell after 1973, so did the growth rate of real per capita GNP.

TABLE 1–2.—*GNP, productivity, and employment measures, 1948–86*

[Average annual percent change]

| Period | Real GNP | Real per capita GNP | Labor productivity[1] | Employment-total population ratio[2] |
|---|---|---|---|---|
| 1948 IV to 1973 IV | 3.7 | 2.2 | 2.8 | −0.3 |
| 1973 IV to 1981 III | 2.2 | 1.1 | .7 | .9 |
| 1981 III to 1986 III | 2.5 | 1.5 | 1.2 | .8 |

[1] Output per hour of all persons engaged in the business sector.
[2] Ratio of business sector employment to population including Armed Forces overseas.

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

Factors other than labor productivity growth also influence growth of real per capita GNP and hence growth of real living standards. The broadest aggregate for which labor productivity is measured is the business sector of the economy, which currently accounts for about 80 percent of real GNP. Changes in the relative size of the business sector affect the relationship between growth of measured labor productivity and growth of real per capita GNP. This relationship is also affected by changes in average hours worked and in the ratio of people employed to the total population. In particular, since 1973, the growth rate of the ratio of employment to total population has exceeded the rate of decline of average hours worked. This has contributed to stronger growth of real per capita GNP than of labor productivity. Demographic developments suggest, however, that this source of growth of real per capita GNP will not be much stronger over the next decade than it has been over the past decade. Hence, prospects for maintaining the growth rate of real per capita GNP,

and for securing increases in this measure of the growth of real living standards, depend critically on maintaining and strengthening growth of labor productivity.

LABOR PRODUCTIVITY GROWTH

Labor productivity is influenced by several important factors: the human capital of the labor force (education, training, experience, and skill); the amount of physical capital, land, and other resources available to cooperate with labor in the production of goods and services; and the technical efficiency of production processes. In the short run, labor productivity is also affected by cyclical fluctuations because businesses typically cut output more than employment during recessions and achieve large increases in output without comparable increases in employment during strong expansions. To assess underlying trends in labor productivity, it is useful to abstract from these cyclical influences. This calculation is provided in Table 1–3 by comparing periods whose endpoints correspond to business cycle peaks (treating the third quarter of 1986 as an end point).

TABLE 1–3.—*Labor productivity growth rates by sector, 1948–86*

[Average annual percent change]

| Period | Business sector | | | | |
|---|---|---|---|---|---|
| | Total | Farm | Nonfarm | | |
| | | | Total | Manufacturing | Nonmanufacturing |
| 1948 IV to 1973 IV | 2.8 | 5.1 | 2.3 | 2.7 | 2.1 |
| 1973 IV to 1981 III | .7 | 4.3 | .6 | 1.5 | .1 |
| 1981 III to 1986 III | 1.2 | 1.3 | 1.1 | 3.8 | .1 |
| Postwar trend: | | | | | |
| 1948 IV to 1986 III | 2.2 | 4.5 | 1.8 | 2.6 | 1.5 |

Note.—Data are for output per hour of all persons.
Sources: Department of Labor (Bureau of Labor Statistics) and Council of Economic Advisers.

Several factors contributed to the slowdown in labor productivity growth that began in the early 1970s. Entry into the labor force of large numbers of new workers who, on average, were less skilled and less experienced than existing workers, tended to depress labor productivity. Growth of capital-labor ratios in the private business sector slowed somewhat during the 1970s. Large increases in the price of energy in the middle and late 1970s diminished the economic efficiency of much existing capital, and required that new investment and research and development be directed toward improving energy efficiency.

The general rate of technological advance also appears to have slowed since the early 1970s. Although difficult to measure, this

slowdown in technological progress seems to have affected most industrial countries. Other factors, such as slower growth of real outlays for research and development, and the rising costs of regulatory compliance, have also been linked to the decline in productivity growth during the 1970s. Most economists conclude, however, that a large portion of the decline in productivity growth remains unexplained, except by a decline in technological progress that is difficult to attribute to any identifiable source.

### SECTORAL PRODUCTIVITY PERFORMANCE

In the current business cycle, the labor productivity growth in both total business and in nonfarm business has picked up from the preceding two cycles, but remains well below the postwar average. In manufacturing, the increase in labor productivity growth has been much more dramatic. Over the past 5 years, the annual rate of labor productivity growth in manufacturing has been 46 percent above the postwar average and is more than double the rate of increase recorded in the previous two cycles.

Labor productivity growth in manufacturing is critical for the international competitiveness of the U.S. economy because exports and imports of manufactures dominate U.S. trade. As is discussed in Chapter 3, weak productivity growth is not the cause of the deterioration of the international competitive position of U.S. manufacturing, although stronger productivity growth could always help improve this position. In fact, the combination of strong labor productivity growth and restrained wage growth (in comparison with productivity and wage developments in other leading industrial countries) has reduced the relative unit labor costs of U.S. manufacturers—a fact that has been concealed until recently by the strong appreciation of the U.S. dollar between 1980 and early 1985.

During the current cycle, productivity growth remained near zero in nonfarm business outside manufacturing. Although no official estimates are published, very sluggish productivity growth in service-producing industries (which produce nearly 90 percent of real GDP of nonfarm nonmanufacturing industries) must primarily account for this poor performance. The addition of large numbers of younger, less-experienced, less-skilled workers to service sector employment probably contributed to sluggish productivity growth in this sector. Although many employees in service sector industries (such as health care, and banking and finance) are high-skill, high-wage workers, wage rates in service sector industries are generally below average wage rates in manufacturing, indicating that skill levels are also lower. Specifically, wage rates are relatively low in the two service

sector industries (retail trade and personal and business services) that have recorded the strongest employment gains since 1981.

Problems in measuring productivity in service-producing industries may be partly responsible for low measured productivity growth in this sector. To measure productivity growth, it is necessary to divide increases in the nominal value of an industry's product into increases in price and quantity. It is difficult to make this distinction when the composition and quality of an industry's output is changing, particularly for service-producing industries where no easy way exists to define and measure a unit of output of constant quality. Indeed, for some service industries, such as certain types of medical care and private education and research, it is assumed that labor productivity growth is zero. There is little evidence, however, that the slowdown in measured service-sector productivity growth since the early 1970s is attributable to more severe measurement problems. Nevertheless, it should be recognized that a shift of output toward lower productivity service industries would reduce measured productivity growth for all business.

### PROSPECTS AND POLICIES FOR PRODUCTIVITY GROWTH

Slower measured labor productivity growth since mid-1984, relative to that recorded earlier in this expansion, probably partly reflects the usual cyclical effect of slower output growth on productivity growth. If real output growth accelerates in accord with Administration projections (discussed in the next section), then productivity growth should increase. Thus, the macroeconomic developments and policies that underlie the Administration's forecast of moderately stronger real GNP growth are critical for near-term prospects for stronger productivity growth.

Four important developments also seem likely to contribute to stronger long-term productivity growth. First, as the labor force on average grows older and more experienced over the next 15 years, labor productivity is likely to advance more rapidly. Second, the recent decline in energy prices should allow for some labor productivity improvement, especially in energy-intensive industries. Third, expenditures on research and development, which declined as a share of GNP in the 1970s, have been increasing since 1978 and should contribute to a higher rate of technological progress. Fourth, as is discussed in Chapter 2, tax reform may have a small negative effect on the long-run capital stock, which would tend to depress labor productivity. However, tax reform will also reduce distortions affecting the distribution of capital among productive activities. A more efficient distribution of capital should contribute to higher productivity.

Productivity can be promoted by avoiding policies that inhibit the efficient functioning of private businesses and competitive markets. For example, productivity is impeded by subsidies that keep unprofitable and inefficient firms in business, at the expense of more profitable and efficient firms that must ultimately finance such subsidies. This applies not only to direct subsidies, but also to tax subsidies and to protectionist measures that provide subsidies by forcing consumers to pay higher prices. Particularly troublesome are protectionist measures applied to intermediate products. They increase production costs and diminish economic efficiency for industries that use these products, injuring their ability to compete with foreign firms, as is discussed further in Chapter 4. Government can also contribute to stronger productivity growth by eliminating or reducing burdensome and inappropriate regulation. A number of initiatives in this area are discussed in Chapter 6.

Government has a critical role to play in education, which equips individuals with the basic knowledge and skills to be productive workers and lays the basis for much scientific and technical advance. The key governmental responsibility in education is that of State and local governments that fund and operate most of the Nation's primary and secondary schools, as well as its public colleges and universities. In this regard, it is noteworthy that standardized measures of educational performance in the Nation's primary and secondary schools have been improving for about the past 10 years, following a long period of decline during the 1960s and 1970s. Improved incentives for educational performance through enhanced merit pay for teachers might contribute to these developments. Increased parental influence over school performance through tuition voucher systems also might contribute to this end.

The Federal Government has an important role in funding basic scientific research. Such research can contribute to technological advance in the longer term. However, its benefits are often too diffuse and difficult to profit from for it to be undertaken by private business. Included in this category are basic and some applied research in biomedicine that not only contribute directly to human welfare, but also help to improve the health component of human capital.

The ultimate objective of policies to improve productivity is to enhance human welfare and increase real living standards. Government policies serve these objectives by encouraging investment in human and physical capital, improvement of productive technology, and allocation of resources to their highest valued uses. The President will soon present initiatives to enhance the Federal Government's contribution in these areas. This will aid in the reversal that is already under way of the forces that previously limited productivity growth.

There is good reason to believe that rising labor productivity and a falling unemployment rate will further raise real per capita GNP and the real living standards of Americans in 1987 and beyond.

## ECONOMIC POLICIES AND OUTLOOK

The future performance of the U.S. economy depends primarily on the productive activities of individuals and businesses. Government policies enhance economic performance by allowing the private enterprise system to function as freely as possible, by maintaining a stable macroeconomic environment, by providing essential public goods and services and support for the needy, and by correcting externalities, distortions, and deficiencies in the operation of the economic system. Policies that serve these vital purposes are examined throughout this *Report*. Two broad areas of macroeconomic policy—monetary policy and fiscal policy—require specific discussion before presenting the Administration's economic projections.

### FINANCIAL DEREGULATION, VELOCITY, AND MONETARY POLICY

The movements in real interest rates, inflation, and asset prices, as well as structural and regulatory changes in the financial services industry, have altered the institutional environment in which monetary policy is conducted. Apparently as a result of both deregulation and disinflation in the 1980s, the velocity of money has behaved unusually, and measures of the monetary aggregates that historically have been most reliable have become less dependable guides to monetary policy. The velocity of money is the ratio of nominal GNP to the money supply. If velocity behavior is reasonably predictable, then control of monetary aggregates is a useful approach to the conduct of monetary policy, and measures of the monetary aggregates can provide important information about the likely economic impact of monetary policy. The unusual behavior of velocity and the monetary aggregates in recent years implies increased uncertainty about the meaning and appropriateness of a given rate of money growth.

With higher inflation and nominal interest rates in the 1970s, the effectiveness of interest rate ceilings and other restrictions on deposits was gradually eroded. In many cases, competitive market forces found ways to circumvent these regulations, and the effects of existing regulations were widely perceived as inequitable or destabilizing. In response, the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St Germain Depository Institutions Act of 1982 mandated elimination of most of the regulations on deposit interest rates that had been in place since the 1930s. The deregulation of deposit interest rates was largely completed in 1986

when the remaining regulations on consumer-owned transactions accounts were removed in January and the interest rate ceiling on passbook savings accounts was removed in March. Depository institutions are now free to pay market-determined rates on all consumer-owned deposits, and no legal restrictions remain on the maturity or minimum size of such deposits.

These and previous regulatory changes, as well as shifts in consumer preferences in response to changes in inflation and interest rates, have altered the composition of the monetary aggregates. For example, interest-bearing transactions deposits accounted for less than 10 percent of M1 (currency plus transactions deposits) before 1981; since then, interest-bearing transactions deposits have grown to nearly one-third of M1, while non-interest-bearing demand deposits have declined from their historical share of 75 to 80 percent of M1 to approximately 40 percent at the end of 1986. Similarly, the composition of the broader monetary aggregate, M2, has been affected by the availability of interest-bearing transactions deposits and the relaxation of interest rate ceilings on time deposits. Passbook savings deposits, for example, accounted for more than one-half of M2 in the mid-1960s, but for only about 13 percent of M2 by the end of 1986.

*The Behavior of Velocity*

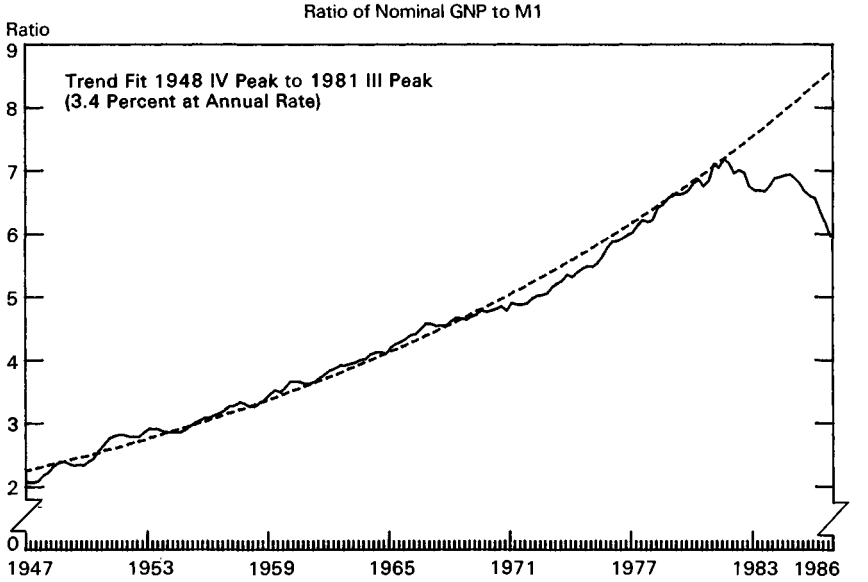
As illustrated in Chart 1–6, for most of the postwar period until recently, the growth of M1 velocity has been reasonably stable. On a quarter-to-quarter basis, of course, M1 velocity has always experienced sizable fluctuations, and M1 velocity historically has shown a cyclical component. Nevertheless, over longer periods, M1 velocity has not deviated very far from its long-term trend. However, in the 1980s and particularly since the cyclical trough of 1982, M1 velocity has fallen markedly below its postwar growth path. For the broader monetary aggregates, velocity was typically less stable than M1 velocity earlier in the postwar period, and a sharp downturn in velocity for these broader aggregates has also occurred in the 1980s.

The recent aberrant behavior of velocity raises important questions for the conduct of monetary policy. Is the behavior of velocity in the 1980s evidence of a permanent breakdown of any reliable relationship between money and income growth? Or, is that basic relationship intact, with its characteristics altered (temporarily or permanently) by deregulation of bank deposits, declining inflation and interest rates, or some combination of the two? If so, can a measure of the money supply be devised that preserves a reliable relationship between it and GNP growth? Although considerable empirical research has investigated these and related questions, it offers no completely satisfactory explanation of recent velocity behavior. However, some inferences can be drawn from the evidence currently available.

Chart 1-6

Velocity of M1

Ratio of Nominal GNP to M1




Sources: Department of Commerce and Board of Governors of the Federal Reserve System.

The available evidence does not justify the conclusion that the basic money-income relationship has become permanently unreliable. To the contrary, some researchers have specified stable demand for money functions or expressions for velocity that are robust to changes in income variables, interest rate variables, and sample periods. For example, recent empirical research identifies a break in the trend growth of velocity in the third quarter of 1981, and once that change is accounted for statistically, the relationship is stable.

It is much less clear, however, what caused the shift in the trend of velocity. The change in the trend of velocity apparently occurred too late to be attributable to the 1979 change in Federal Reserve operating procedures. Similarly, the shift is not closely associated in time with increased volatility of interest rates. Also, the evidence suggests that the record trade deficits of the 1980s have contributed little to the observed decline in velocity.

A number of empirical studies indicate that the decline in M1 velocity in the 1980s is not primarily a reflection of shifts of funds into M1 induced by the introduction of new types of deposit accounts. This view is supported by the fact that a similar shift in the trend

growth of velocity is observed if velocity is calculated using either currency held by the public or the monetary base. In addition, if velocity is measured using a monetary aggregate that excludes the interest-bearing accounts now included in M1, some evidence remains of a decline in velocity, albeit a less steep decline. Moreover, even though M2 would be expected to be less distorted by financial deregulation, M2 velocity has also behaved atypically during the 1980s, although its aberration has been less pronounced than that for M1.

It appears that inclusion of interest-bearing deposits in M1 has increased the interest-elasticity of the demand for money. With an increased interest-elasticity, declining interest rates of the past 4 years would explain more of the decline in velocity than can be explained with lower interest-elasticities. It is also possible that the decline in expected inflation in recent years has exerted additional downward pressure on velocity growth, beyond the effect of expected inflation on interest rates. Much of the empirical evidence available at this time suggests that an increased interest-elasticity of the demand for money in combination with the fall in interest and inflation rates may well in time provide the best explanation of the unusual velocity behavior of the 1980s.

Finally, the demand for money balances is presumably affected by the spread between market interest rates and those paid on deposits. After a long history of legal restrictions on deposit interest rates, these rates have been relatively slow to adjust to changing market conditions since the restrictions were removed. It is therefore plausible that part of the M1 growth that occurred in 1985 and 1986 is related to declines in market interest rates that reduced the opportunity cost of holding M1 balances. Over time, additional changes in market rates relative to deposit rates would be expected to affect the demand for M1. But with only limited experience in a deregulated environment, it is difficult to predict how deposit rates will be adjusted to changes in market interest rates and how the public will respond to changes in relative interest rates.

*Federal Reserve Policy*

Two opposing types of risk are inherent in the conduct of monetary policy. One risk is that monetary policy might be too expansionary and that excess monetary growth will ultimately generate higher inflation and the subsequent need to disinflate. The second risk is that inadequate monetary growth might constrain the growth of real economic activity. While the balancing of these two types of risk is never easy, the task has been made more difficult in recent years by the unusual pattern of velocity behavior, which reflects a less reliable relation between money and nominal GNP growth.

In 1986, monetary policy was influenced by a wide range of economic and financial market developments. In the first 4 months of 1986, market interest rates declined substantially as the oil price declines and other price developments had favorable effects on the near-term outlook for inflation. In this period, the Federal Reserve Board reduced the discount rate twice in order to realign it with lower market rates. Money growth was relatively modest early in the year as M1 expanded along the upper bound of its target range and the broader aggregates were within or below their prescribed ranges. As evidence of economic weakness emerged in the second quarter and inflation remained subdued, the Federal Open Market Committee (FOMC) voted in July to ease reserve conditions and the Federal Reserve Board approved another cut in the discount rate, again largely in response to additional downward movements in market interest rates that had occurred in June. Even though M1 growth accelerated rapidly beginning in the spring, these accommodative policy actions were judged appropriate in light of the fact that the broader monetary aggregates remained within their target ranges, and uncertainty continued about the reliability of the linkage between M1 and nominal income growth.

Similar policy actions were adopted again in August as economic activity continued to appear sluggish and the broader aggregates still grew at moderate rates, despite very rapid M1 growth. Because each of the discount rate cuts in 1986 occurred after general declines in market interest rates, the discount rate followed, rather than led, interest rate movements. However, following the April and August discount rate cuts, market interest rates generally increased. In addition, in the 2 months immediately following the August discount rate cut, long-term interest rates rose both absolutely and relative to short-term rates, resulting in a steepening of the yield curve. This illustrates the limitations on the capacity of discount rate cuts to secure lasting reductions in market interest rates.

By the summer of 1986, the broader monetary aggregates were also growing more rapidly and M2 reached the upper bound of its target range in August. The FOMC appeared to become more concerned about the inflationary potential of money growth, a concern that had been apparently discounted earlier in the year when M1 alone was growing rapidly. Implicit in these decisions was the judgment that with the uncertainty about M1 velocity, the broader monetary aggregates were more reliable guides to monetary policy than M1. From the fourth quarter of 1985 to the fourth quarter of 1986, M1 growth averaged more than 15 percent, well above the Federal Reserve's target range of 3 to 8 percent. M2 growth from the fourth

quarter of 1985 to the fourth quarter of 1986 was just at the upper bound of its 6 to 9 percent target range.

Although the full consequences of monetary policy actions are often not felt for more than a year afterwards, the record in 1986 suggests that the Federal Reserve did a reasonably good job in balancing the risk of inadequate money growth against the long-term inflationary risk of too much money creation. As the economy expanded more slowly than expected during the year and inflation continued to be moderate, the Federal Reserve allowed M1 growth to exceed its predefined target range and relied more heavily on a broader range of economic data. Further depreciation of the dollar in 1986 was apparently not interpreted as a signal of the need for slower money growth, probably because real dollar depreciation was widely regarded as desirable to improve U.S. international competitiveness, and because the lower dollar had little visible effect on the inflation rate. In the context of moderate real growth, very low inflation, and falling inflation expectations and given the uncertainty about the behavior of velocity, the de-emphasis of M1 in favor of other variables to gauge the conduct of monetary policy appears to have been an appropriate judgment.

Despite weaker-than-expected economic growth in 1986, no evidence suggests that the Federal Reserve has erred on the side of monetary restriction. Based on money growth, interest rates, or exchange rates, it is not reasonable to conclude that monetary policy was "too tight" in 1986. The failure of the real economy to perform as well as most forecasters had predicted is clearly related to sectoral problems, and is not the result of inadequate monetary expansion. In particular, the adverse effects on the energy sector of the oil price declines, the further deterioration of the trade balance, and the continued stress in the agricultural sector together appear to have limited economic growth in 1986.

One cannot dismiss the fact, however, that by historical standards, M1 growth in 1986 was high. It substantially exceeded the Federal Reserve's own target range, as well as most analysts' a priori views of appropriate money growth. Until a more reliable relationship between M1 and nominal income growth is reestablished, however, the implications of this rapid M1 growth remain uncertain. Given the various factors discussed above that appear to be working to alter—at least temporarily—the relationship between money and GNP growth, rates of monetary expansion that would have previously implied a resurgence of inflation appear to have been necessary in recent years to satisfy an increase in the demand for real money balances relative to income. Although the nature of the change in velocity behavior is not fully understood at this time, no plausible assessment of the

change in velocity growth would imply a permanent need for such rapid money growth. Analysts agree that at some point the rate of monetary growth must be reduced if the ultimate goal of price stability is to be achieved. The difficult policy issue is one of timing—to assess when sufficient money growth has been provided to satisfy increased demand for money balances and to determine the extent to which money growth should be decelerated.

From the outset, the Administration has emphasized the importance of promoting sustainable real economic growth within an environment of long-run price stability. With a continuation of slower than expected economic growth, moderate inflation, and serious stress in some sectors of the economy, the dangers of a monetary restriction of economic activity are real and important. Given the economic dislocation associated with the rise of inflation in the 1970s and its reduction in 1981-82, the Nation also cannot afford to ignore the dangers of allowing a reacceleration of inflation and the inevitable economic cost of disinflation.

### THE MACROECONOMIC EFFECTS OF DEFICIT REDUCTION

In fiscal 1986, the Federal deficit amounted to 5.3 percent of GNP. Under the provisions of the Balanced Budget and Emergency Deficit Control Act of 1985, commonly referred to as Gramm-Rudman-Hollings (GRH), the deficit is scheduled to decline gradually to zero by fiscal 1991. As outlined in the President's 1988 budget, it is assumed that deficit reduction will be achieved primarily through restraining Federal spending, not by raising taxes. In the long run, this approach to deficit reduction should contribute to economic growth by freeing resources that would have been used by the Federal Government for more efficient use by the private sector. Also, by avoiding tax increases, this approach protects private incentives to work, save, and invest.

The analysis of the prospects for reducing the Federal deficit, presented in Chapter 2 of this *Report*, provides several facts relevant for assessing the probable short-term macroeconomic effects of deficit reduction. First, net interest expense of the Federal Government as a share of GNP will decline by 1 percentage point, implying an equal reduction in the Federal deficit as a share of GNP. This decline in net interest expense will occur provided that the economy grows and interest rates decline in accord with the Administration's projections, and provided that growth of the stock of Federal debt is slowed by reducing the Federal deficit in accord with the GRH targets. Second, Federal receipts as a share of GNP are projected to rise by 0.9 of a percentage point between fiscal years 1986 and 1991. A small part of this rise is due to already scheduled increases in social security pay-

roll taxes, but most is due to the expected revenue benefits of continued economic growth. Third, excluding net interest expense and social security benefits (which are projected to maintain approximately a constant share of GNP), the composite of all other Federal spending amounted to $655 billion in fiscal 1986, or 15.7 percent of GNP. If real spending on this composite stayed constant at fiscal 1986 levels, projected real economic growth between fiscal years 1986 and 1991 would reduce the share of such spending in GNP by 2.4 percentage points.

It is plausible to suppose that these three sources of deficit reduction, which jointly account for 81 percent of the required reduction in the Federal deficit as a share of GNP, will not generate any significant, short-run, negative macroeconomic effects. Reaching the GRH target of a balanced budget by fiscal 1991, however, will require more than holding constant real government spending on the composite that excludes net interest and social security benefits. It will also require a cut of about $39 billion in real spending from this composite. As is discussed in Chapter 2, achieving such real expenditure reductions while providing for increased real Federal spending in critical areas of national need will require hard political choices. However, this magnitude of real Federal spending cuts, spread over several years, should not have serious adverse consequences for overall economic activity.

Further, it should be recognized that at some time, the Federal deficit must be reduced as a share of GNP. The potential negative macroeconomic consequences of deficit reduction are minimized by achieving deficit reduction gradually, when other economic forces appear likely to sustain economic expansion. As improved U.S. international competitiveness contributes to a smaller trade deficit, the likelihood increases that resources that might otherwise be used to satisfy rising Federal expenditures will find other uses. A noninflationary monetary policy that fosters permanent reduction in interest rates also eases the task of deficit reduction by contributing to lower net interest expense for the Federal Government.

## ECONOMIC FORECAST FOR 1987

The Administration forecasts a strengthening of economic growth with continued moderate inflation in 1987. The impediments to economic growth that brought past expansions to a halt are not evident: inflation and interest rates remain low, inventory stocks are relatively lean, and resource constraints and production capacity pressures are absent. Table 1–4 summarizes key aspects of the Administration's forecast for 1987. The Administration's estimate of real GNP growth this year is 3.2 percent, measured fourth quarter to fourth quarter,

compared with a growth rate of 2.2 percent in 1986. For 1987, strong growth in employment is forecast to continue and the total unemployment rate is predicted to be 6.5 percent in the fourth quarter. An improved balance of trade, an increase in inventory investment, and cessation of the economic deterioration caused by the drop in oil prices should contribute to stronger growth in 1987.

The inflation rate in 1987 is forecast to return to the 3.5 to 4 percent range of recent years, before the decline in oil prices temporarily depressed the inflation rate in 1986. Specifically, the GNP deflator is forecast to rise at a 3.6 percent annual rate during 1987, after a 2.2 percent rate of increase during 1986. During 1987, the CPI is expected to increase at a slightly faster rate than the GNP implicit price deflator, reversing the pattern in 1986. This is because the CPI embodies import prices more directly than does the GNP implicit price deflator, and import prices are expected to rise more rapidly than domestic prices because of the continuing effects of depreciation of the dollar.

TABLE 1–4.—*Economic outlook for 1987*

| Item | 1986[1] | 1987 forecast |
|---|---|---|
| | Percent change, fourth quarter to fourth quarter | |
| Real gross national product | 2.2 | 3.2 |
| Personal consumption expenditures | 4.0 | 2.3 |
| Nonresidential fixed investment | −5.4 | 2.5 |
| Residential investment | 9.8 | 1.5 |
| Federal purchases of goods and services | 1.8 | −2.5 |
| State and local purchases of goods and services | 4.6 | 2.7 |
| GNP implicit price deflator | 2.2 | 3.6 |
| Compensation per hour[2] | 2.6 | 4.8 |
| Output per hour[2] | 1.1 | 1.9 |
| | Fourth quarter level | |
| Unemployment rate (percent)[3] | 6.8 | 6.5 |
| Housing starts (millions of units, annual rate) | 1.7 | 1.8 |

[1] Preliminary.
[2] Nonfarm business, all persons; fourth quarter 1986 estimated.
[3] Unemployed as percent of labor force including resident Armed Forces.

Note.—Based on seasonally adjusted data.

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

The Administration's forecast embodies the following assessments for the four main components of GNP: consumption, investment, government spending, and net exports. First, growth of real consumption spending is forecast to slow from the 4.0 percent annual growth rate in 1986, but is still expected to make a substantial contribution to real GNP growth in 1987. As discussed earlier, a rapid increase and high level of real household net worth tend to raise con-

sumption spending. However, the relatively low personal saving rate in 1986 suggests that households may wish to hold growth of consumption spending below that of disposable personal income in order to restore personal saving rates to more normal levels. Moreover, the boost to real disposable personal income, and hence to real consumption spending, from the sharp decline in oil prices in 1986, is unlikely to be repeated in 1987.

Second, real investment is expected to strengthen because of gains in nonresidential fixed investment and inventory investment, despite a substantial slowdown in residential investment growth. Real nonresidential fixed investment fell in 1986, partly because of the problems of the oil and gas industry and perhaps also because of some short-run adverse effects of the tax reform process. Lower interest rates, rising corporate profits, stronger economic growth, and (as previously explained) a high ratio of the market value of financial claims for ownership of business enterprises to the price of capital goods should contribute to some strengthening of real nonresidential fixed investment in 1987. Real residential investment, however, seems unlikely to repeat the strong growth performance of 1986. In particular, high vacancy rates and the effects of tax reform may inhibit growth of multifamily housing construction. Concerning inventory investment, it is noteworthy that manufacturing inventories have generally been falling for more than a year and a half and the inventory-sales ratio is currently low for other sectors as well. With continued growth of domestic sales and improvement in net exports, producers should begin accumulating inventories at a faster pace.

Third, given their relatively strong budget positions, continued modest growth of real spending by State and local governments seems probable. In contrast, the program to reduce the Federal fiscal deficit should lead to a modest reduction in real Federal purchases of goods and services in 1987.

Fourth, after deducting 0.7 percent from economic growth in 1986, real net exports are expected to contribute a similar amount to growth in 1987. The falling dollar appears finally to be influencing the prices of non-oil imports. The fixed-weighted price index for non-oil imports rose 9.4 percent during 1986 and further increases are expected in 1987. Higher relative prices for goods imported into the United States and lower relative prices of U.S. exports in foreign markets should improve U.S. net exports.

A special factor that should aid real GNP growth in 1987 is the end of the decline of production and investment in the domestic oil and gas industry. Following the oil price drop in early 1986, drilling operations for gas and oil plummeted, pulling down nonresidential fixed investment for most of the year. If oil prices remain near year-

end levels, declining activity in the domestic oil and gas industry should not continue to detract from real GNP growth in 1987. While the direct effects of lower oil prices were largely completely absorbed by the economy in 1986, secondary benefits may still be forthcoming.

ECONOMIC PROJECTIONS FOR 1988-92

The Administration's longer term economic projections represent expected trends and should not be interpreted as year-to-year forecasts. They reflect the long-run economic policy goals of the Administration and long-run trends in the economy. Specifically, it is assumed that the incentives for economic activity embodied in the reduced marginal tax rates contained in the Tax Reform Act of 1986 are preserved and that further gains are made in reducing government spending and the burden of government regulation. Also, the Federal Reserve is assumed to continue a policy that is both consistent with gradual achievement of the long-term goal of price stability and not so restrictive as to impair economic growth.

The Full Employment and Balanced Growth Act of 1978 requires the *Economic Report of The President*, together with the *Annual Report of the Council of Economic Advisers*, to include an Investment Policy Report and review progress in achieving goals specified in the Act. The projections for 1987 through 1992 summarized in Table 1-5 constitute the "...annual numerical goals for employment and unemployment, production, real income, productivity and prices...", prescribed by this Act. The projections go far in achieving the goals specified in the Act for unemployment and inflation, while achieving many other aims of the legislation such as balanced growth, reduced Federal spending, adequate productivity growth, an improved trade balance, and increased competitiveness of agriculture, business, and industry. Although the goal of 4 percent unemployment, specified in the legislation, is not attained by 1992, this does not indicate a lack of commitment to achieving full employment. On the contrary, the Administration is dedicated to bringing about full employment and stable prices by creating an environment conducive to healthy and sustained economic growth. There are no quick fixes to reach the legislation's stated goals; government best serves these goals by allowing private enterprise to flourish, thereby generating long-term growth and full utilization of resources in a noninflationary environment.

Specifically, the Administration's economic projections detailed in Table 1-5 show real GNP growth rising to 3.6 percent in 1989 and declining slowly to 3.4 percent in 1992. Stronger real growth reflects the long-term benefits of tax reform, as well as factors that will improve growth in the current year and carry forward in later years. Further improvements in real net exports are expected, especially in

TABLE 1-5.—*Administration economic assumptions, 1987-92*

[Calendar years]

| Item | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| | Percent change, year to year | | | | | |
| Real GNP | 2.7 | 3.5 | 3.6 | 3.6 | 3.5 | 3.4 |
| Real compensation per hour[1] | .8 | 2.0 | 1.8 | 1.7 | 1.8 | 1.9 |
| Output per hour[1] | .9 | 2.2 | 2.0 | 1.9 | 1.9 | 1.9 |
| Consumer price index[2] | 3.0 | 3.6 | 3.6 | 3.2 | 2.8 | 2.2 |
| | Annual level | | | | | |
| Employment (millions)[3] | 113.5 | 115.8 | 118.0 | 120.2 | 122.0 | 123.9 |
| Unemployment rate (percent)[4] | 6.7 | 6.3 | 6.0 | 5.8 | 5.6 | 5.5 |

[1] Nonfarm business, all persons.
[2] For urban wage earners and clerical workers.
[3] Includes resident Armed Forces.
[4] Unemployed as percent of labor force including Armed Forces.
Source: Council of Economic Advisers.

1988. Higher production will lift incomes and consumption, and business investment should strengthen further in 1988 and beyond. Production is projected to grow sufficiently rapidly to lower the unemployment rate to 5.5 percent by 1992. Consistent with gradual achievement of the long-term goal of price stability, the inflation rate is projected to decline to 2.2 percent by 1991. Productivity growth is projected to improve from recent levels because of the normal cyclical effect of stronger output growth and because of expected improvements (discussed earlier) in the trend rate of growth of labor productivity. Coincident with this improvement in productivity growth, increases are expected in real compensation per hour.

These projections reflect the Administration's policies to promote long-term, noninflationary growth by encouraging investment in physical and human capital and improvements in productive technology. The Administration believes that creating an economic environment that provides strong incentives for work and production is the best policy for promoting investment and productivity growth. Reducing disparities in the rate of taxation on different economic activities contributes to this result by encouraging resources to be allocated to activities where they can be used most productively. Chapter 2 describes how the Tax Reform Act of 1986 promotes these goals. Also, as is discussed in Chapter 2, Federal spending restraint will free resources to be invested more productively to support growing domestic and foreign demands for U.S. products. Chapters 3 and 4 describe policies to improve the U.S. trade balance.

Long-run growth in the economy is governed by expansion in the economy's capacity to produce. Growth in the working-age population, in labor force participation rates, and in output per person all play a role in this expansion. Table 1–6 outlines the contributions to growth of these factors for historical periods beginning and ending at cyclical peaks, for the current cycle so far, and for the projection period. The table presents a simple progression of steps from population growth to GNP growth.

TABLE 1–6.—*Accounting for growth in real GNP, 1948–92*

[Average annual percent change]

| Item | 1948 IV to 1981 III | 1973 IV to 1981 III | 1981 III to 1986 IV [1] | 1986 IV [1] to 1992 IV |
|---|---|---|---|---|
| GROWTH IN: | | | | |
| 1) Civilian noninstitutional population aged 16 and over | 1.5 | 1.8 | 1.2 | .9 |
| 2) PLUS: Civilian labor force participation rate | .2 | .5 | .5 | .6 |
| 3) EQUALS: Civilian labor force | 1.8 | 2.4 | 1.7 | 1.5 |
| 4) PLUS: Civilian employment rate | −.1 | −.4 | .1 | .3 |
| 5) EQUALS: Civilian employment | 1.7 | 2.0 | 1.8 | 1.8 |
| 6) PLUS: Nonfarm business employment as share of civilian employment | .1 | .1 | .2 | .2 |
| 7) EQUALS: Nonfarm business employment | 1.7 | 2.1 | 2.0 | 2.0 |
| 8) PLUS: Average weekly hours (nonfarm business) | −.4 | −.6 | −.1 | −.1 |
| 9) EQUALS: Hours of all persons (nonfarm business) | 1.4 | 1.5 | 1.9 | 1.9 |
| 10) PLUS: Output per hour (productivity, nonfarm business) | 1.9 | .6 | 1.1 | 1.9 |
| 11) EQUALS: Nonfarm business output | 3.3 | 2.0 | 3.0 | 3.8 |
| 12) LESS: Nonfarm business output as share of real GNP | .0 | −.1 | .5 | .3 |
| 13) EQUALS: Real GNP | 3.3 | 2.2 | 2.4 | 3.5 |

[1] Data for 1986 IV are preliminary.

Note.—Based on seasonally adjusted data. Detail may not add to totals due to rounding.

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

First, the sum of population growth and growth in the labor force participation rate determines growth in the labor force. While growth of the adult population has been slowing for some time as the last of the baby-boom generation passes into working age, the participation rate continues to climb. Continued growth in the participation rate of women and the incentives for increased work effort provided by tax reform imply growth of the labor force well into the 1990s. A growing labor force coupled with further reductions in the unemployment rate (represented by increases in the employment rate in the table) determine employment growth for 1987-92 that is expected to match the 1981-86 experience.

In order to use published productivity figures, employment is adjusted to cover nonfarm business only, and then translated into growth in total hours worked. The addition of growth in total hours and output per hour (labor productivity) determines growth in nonfarm business output. Recently, productivity gains in sectors other

than manufacturing have been disappointing. Expectations of future gains, although above recent productivity growth, have been scaled back somewhat from previous projections. Productivity is projected to increase at approximately 1.9 percent, on average, over the 1987-92 period, up 0.8 of a percentage point from rates experienced in the current cycle to date. After adjustment for the stronger relative rate of growth of the nonfarm business sector, the growth rate of real GNP is given in the last line of Table 1–6. The calculations in the table indicate that the projected improvement in productivity growth (output per hour) from 1.1 to 1.9 percent per year is the key to stronger real GNP growth and to the gains in real living standards that this growth will generate.

## CONCLUSION

Although 1986 was not an outstanding year in terms of real GNP growth, the economic expansion proceeded on a broad front through its fourth year, and important progress was made in expanding employment and reducing inflation and interest rates. The problems that kept overall growth below expectations were largely sectoral: a decline in world oil prices that depressed employment and investment in the domestic oil and gas industry; continued difficulties in U.S. agriculture; and a further deterioration of the U.S. trade balance. Nowhere evident were the problems that usually portend the end of expansions. Rather, the economic developments of 1986 affirm that the destructive sequence of progressively rising inflation rates and interest rates, interrupted by severe recessions, has been broken. The foundation for sustainable growth of production and employment, accompanied by gradually declining inflation and unemployment, has been strengthened.

For the future, real economic growth is projected to accelerate. Inflation is projected to resume its gradual decline, after a modest upturn because of erosion of the temporary effects of the recent oil price decline. Continuation of stable macroeconomic policies is essential to realizing these projections and to avoiding cycles of inflation and disinflation that are associated with unnecessary swings in relative prices, real interest rates, and real asset values, and ultimately with many of the structural and sectoral problems that still beset the U.S. economy. In particular, monetary policy faces a difficult task in a period when the traditional guideposts for its conduct have become less reliable. It must continue to tread cautiously between the risk of inadequate money and credit creation that would jeopardize economic expansion in the short run, and the risk of excessive monetary

growth that would reignite inflation and seriously damage economic performance in the long run.

Ultimately, the long-run growth rate of the economy and the growth of real living standards depend primarily on the productivity of individuals and businesses operating in the private sector. As discussed here and in later chapters of this *Report*, government has an important role to play in enhancing the efficiency and productivity of the economic system. Its principal contribution is to maintain a stable macroeconomic environment and to allow the natural incentives of the flexible, private enterprise system to stimulate individuals and businesses to increase the quantity and enhance the quality of productive resources, to improve the efficiency of production processes, and to deploy the Nation's resources to their highest valued uses.

CHAPTER 2

# Budget Control and Tax Reform

GOVERNMENT TAX AND EXPENDITURE POLICIES strongly influence the economy's long-run performance. Government-provided goods and services improve economic performance if their value exceeds their cost, as measured by the value of the private goods and services they displace. The cost of government-provided goods and services, in turn, depends on the efficiency of the tax system. An efficient tax system entails low and unvarying marginal tax rates that have minimal effects on private investment and consumption choices.

The Administration is committed to a policy of restructuring Federal fiscal activities to serve the national interest more effectively. Tax reform, the Administration's number one domestic priority for the past several years, has been accomplished. The Tax Reform Act of 1986 significantly lowers tax rates and will decrease tax-induced distortions in private economic decisions. Progress has also been made in Federal spending restraint. The upward trend in Federal Government expenditures as a share of gross national product (GNP), which had persisted for most of two decades, was reversed in 1984. For the first time since 1973, real Federal Government expenditure is projected to fall in fiscal 1987. Further spending restraint, however, will be necessary to achieve the future deficit targets set in the Balanced Budget and Emergency Deficit Control Act of 1985 (popularly known as Gramm-Rudman-Hollings), targets to which the Administration is firmly committed.

This chapter surveys both the Administration's accomplishments and its future agenda concerning the restructuring of Federal fiscal activities. The chapter begins with a discussion of the Federal budget deficit, the need for Federal spending restraint, and proposed changes in the budgetary process. It argues that the objective of balancing the budget by 1991 can be achieved without a general tax increase and without sacrificing programs essential to the national interest. This task will require uncompromising efforts to eliminate all unnecessary Federal spending, efforts that could be aided by appropriate reforms of the budgetary process. The chapter then turns to an assessment of the economic effects of the Tax Reform Act of 1986. It finds that tax reform, while entailing minor transition costs,

significantly improves the economy's long-run economic performance. Specifically, it is estimated that national net output of goods and services increases approximately 2 percent because of the long-run consequences of tax reform. In 1986, this would have amounted to an increase of approximately $600 in the income of the average American family.

## SPENDING RESTRAINT AND DEFICIT REDUCTION

The current economic expansion marks the first occasion in the postwar period when Federal deficits have exceeded 5 percent of GNP, and when very large deficits have persisted into the third and fourth years of an expansion. At comparable periods during the expansions of the 1960s and 1970s, the Federal deficit as a share of GNP was generally less than one-half the level of 1985 and 1986. The underlying cause of the growing Federal deficit is illustrated in Chart 2–1. The share of Federal spending in GNP has continued on an upward trend, while the secular trend in the share of Federal revenues has remained virtually flat.

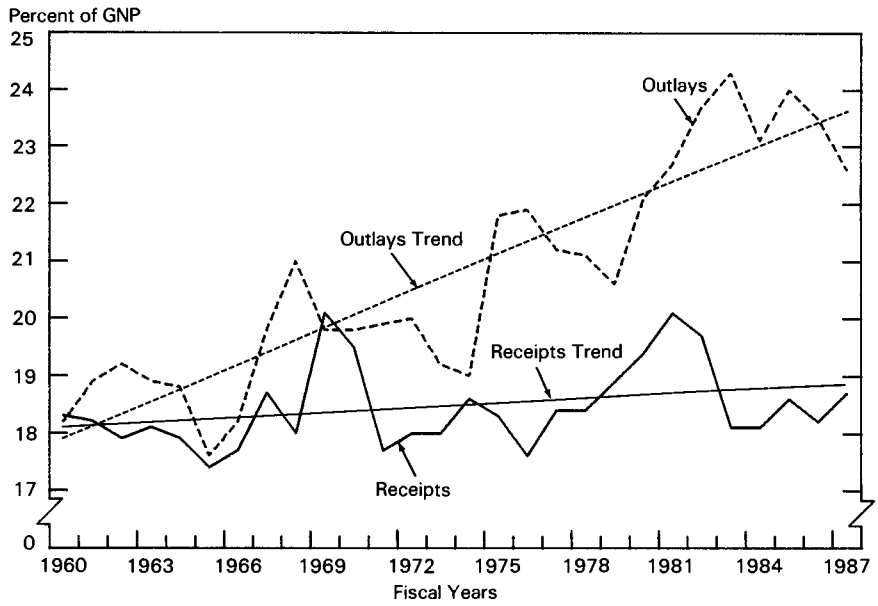
Under the provisions of Gramm-Rudman-Hollings, significant deficit reduction will occur in fiscal 1987. With moderately good economic performance and absent large new spending initiatives, the Office of Management and Budget projects that the Federal deficit will decline by almost $50 billion between fiscal 1986 and fiscal 1987, equivalent to more than a full percentage point of GNP. The Administration's proposed budget for 1988 provides for another important step in the process of deficit reduction, to the target of $108 billion, along a path to reach a balanced Federal budget by 1991. Five critical reasons explain why this process of deficit reduction must continue and why deficit reduction should be achieved primarily through spending restraint.

### REASONS FOR DEFICIT REDUCTION

First, persistent large Federal deficits, except during periods of severe economic difficulty or extraordinary national need, constitute an unfair burden on future generations. The principle that "there is no free lunch" applies to lunches charged on Uncle Sam's credit card. In the end, all Federal spending must be paid for by some form of explicit or disguised taxation. Finance of current expenditures through the issuance of Federal debt merely postpones the inevitable day when the bill for current services (plus accumulated interest) must ultimately be paid, either through higher taxes or through reduced public services. More specifically, interest payments on the Federal debt must ultimately be financed by some combination of re-

Chart 2-1

Federal Outlays and Receipts as Percent of GNP




Note.—Data for 1987 are estimates.
Sources: Department of Commerce, Office of Management and Budget, and Council of Economic Advisers.

ducing the growth of noninterest Federal outlays below the growth of GNP or by higher future taxes relative to GNP. The longer large deficits persist, the larger grows the outstanding stock of Federal debt and hence the greater is the ultimate required adjustment in future noninterest outlays or taxes. Thus, the choice is not whether to reduce the budget deficit, but rather when and by what means.

Second, deficit reduction through spending restraint is essential to preserve the long-term economic benefits of the low marginal tax rates established in the Tax Reform Act of 1986. This chapter later analyzes the gains to national income and national welfare from tax reform. These long-run benefits will begin to emerge, however, only if marginal tax rates are lowered as promised in 1988, and only if individuals and businesses believe that these tax rates will not be increased in the future.

Third, persistent large Federal deficits throughout an economic expansion could pose a difficult dilemma for macroeconomic policy in the event of a significant economic downturn. In such a downturn, Federal receipts automatically decline and transfer payments expand.

Either a sharply contractionary fiscal policy would need to be adopted during a recession to prevent a further increase in the Federal deficit, or the share of the deficit in GNP would have to be allowed to expand to levels not previously experienced in the United States in peacetime. As is discussed in Chapter 1, there is no reason now to expect a recurrence of the economic difficulties that contributed to the steep recessions of 1974–75 and 1980–82. Nevertheless, it would be imprudent to permit the persistence of large Federal deficits throughout an economic expansion in light of the dilemma such deficits could create in the future.

Fourth, reduction of the Federal deficit through spending restraint is an essential component of the strategy to reduce international payments imbalances. Substantial progress has already been made on one component of this strategy—exchange-rate realignments that improve the international competitive positions of many U.S. industries and promise significant reductions in the U.S. trade deficit in 1987 and beyond. As is discussed in Chapter 3, however, reduction of the U.S. trade deficit and of the corresponding trade surpluses of other countries also requires that domestic demand in the United States grow more slowly than U.S. GNP and conversely for foreign countries. Simultaneously, the United States must improve its national saving/investment balance (private saving less the sum of private investment and the government deficit). Reduction of the Federal budget deficit through spending restraint is a key U.S. contribution to achieving these results in a manner consistent with sustainable, noninflationary growth of the world economy. Furthermore, as discussed in Chapter 1, significant reductions in the trade deficit increase the likelihood that resources that might otherwise be used to meet the demands arising from Federal purchases will shift rapidly to meet the demands of sectors producing exports and import substitutes.

Fifth, deficit reduction through spending restraint is required because Federal spending in many areas remains above levels necessary to provide essential Federal services on an efficient and cost-effective basis. Much has been accomplished during the past 6 years in cutting back inessential, ineffective, and inefficient Federal programs. Larger cutbacks can and should be made in a number of Federal programs that serve special interests but whose benefits to the American people do not justify the costs imposed on current or future taxpayers. Equally important, new spending initiatives should be limited to critical areas of national need in the realm of Federal responsibility.

Deficit reduction is ultimately an issue of priorities. The long-run benefits of stronger economic growth from the relatively low marginal tax rates provided in the Tax Reform Act of 1986 can be pre-

served only if the share of Federal spending in GNP is gradually reduced. Alternatively, Federal spending can be maintained and expanded on programs that serve a variety of special interests, at the expense of current and future consumption by American families and investment by American businesses. In making the politically difficult choices required for deficit reduction, however, damage to Federal programs that promote peace, maintain national security, or provide essential support to the poor and elderly is neither necessary nor desirable.

## GROWTH OF THE FEDERAL BUDGET DEFICIT

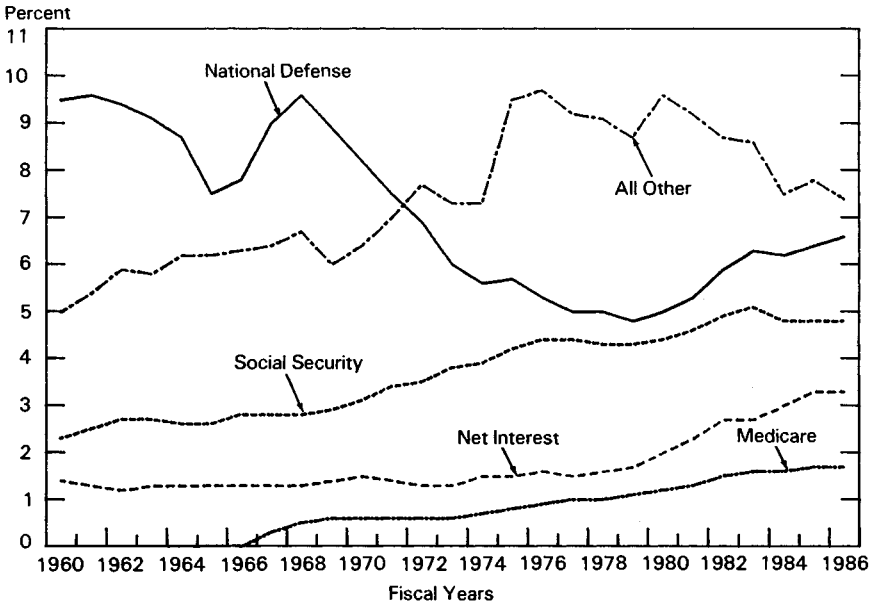
The tax rate reductions mandated by the Economic Recovery Tax Act of 1981 (ERTA) reduced the share of Federal receipts in GNP to the average of the 1960s and 1970s. In 1986, this share stood at 18.5 percent, virtually the same as in 1978 (also the fourth year of an economic expansion). Between 1978 and 1981, the share of Federal tax collections rose to a postwar high of 20.1 percent, primarily as the result of bracket creep. A significant contribution of ERTA was the indexation of tax brackets, standard deductions, and personal exemptions, effective in 1985, which ensured that future inflation could not once again push up the share of Federal revenues without an explicit and visible decision to raise tax rates.

On the spending side of the Federal budget, total spending growth has not been adequately restrained, but the distribution of Federal spending has changed in important respects. Between 1978 and 1986, Federal spending rose from 21.1 to 23.8 percent of GNP. The key changes in the distribution of Federal spending that occurred between 1978 and 1986 are illustrated in Chart 2–2 and may be summarized as follows:

- The share of defense spending increased from 4.8 percent of GNP to 6.6 percent, ending the long period of erosion of national defense capabilities.
- The share of social security benefits increased by 0.5 percent of GNP, maintaining a critical commitment to older and disabled Americans and their families.
- The share of medicare expenditures increased by 0.7 percent of GNP, reflecting both increased health care benefits and the partial success of efforts to limit the increasing cost of providing such benefits.
- The share of net interest payments increased by 1.7 percent of GNP, reflecting higher interest rates and the growing stock of Federal debt.
- The share of general nondefense programs (except social security, medicare, and net interest) declined by 1.8 percent of GNP.

Chart 2-2

Federal Outlays as Percent of GNP




Sources: Department of Commerce and Office of Management and Budget.

- Within the broad category of general domestic programs, funds were reallocated away from inefficient, ineffective, low-priority programs and toward programs serving important national needs. For example, funding for community and regional development was reduced substantially and general revenue sharing was eliminated, while outlays for health research and Federal law enforcement activities increased significantly.

Despite the substantial progress already achieved in reorienting budget priorities, important work remains to be done. Elimination or curtailment of inessential, inefficient, and ineffective Federal programs is required to contribute to reduction of the share of Federal spending in GNP and to allow room for expansion of programs that serve critical national needs.

## PROSPECTS FOR DEFICIT REDUCTION

The Administration is committed to achieving the targets for deficit reduction prescribed by Gramm-Rudman-Hollings (GRH). The first important step in this process will be taken during the current fiscal year, with a reduction of the Federal deficit to almost $50 bil-

lion below its fiscal 1986 level. Meeting the GRH deficit targets for 1988 and later fiscal years will not be an easy task, even with the continuation of reasonably strong economic growth and with further moderation of inflation and interest rates. However, as the following analysis suggests, the task is achievable provided the economic climate remains favorable.

In fiscal 1986, Federal spending amounted to 23.8 percent of GNP, while Federal receipts absorbed 18.5 percent of GNP, leaving a deficit of 5.3 percent of GNP. Under the Administration's economic projections, continued economic growth and previously legislated increases in social security payroll taxes will increase the share of Federal receipts to 19.4 percent of GNP by 1991. These projections imply that spending restraint must reduce the share of Federal spending in GNP by 4.4 percent by 1991 to achieve a balanced budget without general tax rate increases.

The President is firmly committed to no reductions in social security retirement benefits. Fulfilling this commitment means that the share of social security expenditures will remain virtually unchanged at 4.5 percent of GNP. Reductions in the share of total Federal spending in GNP must come from other sources.

Net interest payments amounted to 3.3 percent of GNP in fiscal 1986. If the economy grows and interest rates decline as projected, and if growth in the outstanding stock of Federal debt is slowed by deficit reduction in accord with GRH targets, then net interest expense will decline by at least 1 percentage point of GNP by 1991. This process is the reverse of that through which a rapidly growing stock of Federal debt (fed by large Federal deficits) and rising interest rates contributed to the growth of net interest expense as a share of GNP. To reverse this process, however, it is absolutely essential to place the ratio of Federal debt to GNP on a descending path, mainly through progress in spending reduction in categories other than net interest expense. The sooner this task is accomplished, the easier will be the subsequent task of deficit reduction.

The projected reduction of 1 percent in the share of net interest expense and the relative constancy in the share of social security benefits imply that to reach a balanced Federal budget, the combined share of all other categories of Federal expenditure must decline from 15.7 percent of GNP in 1986 to roughly 12.5 percent in 1991. Total Federal spending in this broad composite amounted to $655 billion in fiscal 1986. If real spending in this composite remained constant at the 1986 level, projected economic growth between 1986 and 1991 would reduce its share in GNP from 15.7 to 13.3 percent. Thus, an absolute reduction of real spending in this composite of

about $39 billion of 1986 dollars is required to achieve a balanced budget.

Cutting $39 billion or 6.0 percent from composite spending of $655 billion should not be an insurmountable task. The difficulty of this task is heightened, however, by the need to accommodate real spending increases in areas of critical national need and primary Federal responsibility. In particular, in the 1988 budget, the President has identified the following major areas as requiring increased expenditures: national defense, foreign affairs (including foreign aid and embassy protection), scientific and health research (including acquired immune deficiency syndrome research), drug abuse control and treatment, space exploration, and implementation of the new immigration law. Increasing expenditures in these critical areas will require deeper cuts in less essential Federal programs if the deficit reduction targets are to be met.

### PROPOSALS FOR SPENDING REDUCTIONS

The Administration's proposals for program reductions and terminations are described in detail in the President's 1988 budget. A brief review of some of these proposals helps to place the economic issues associated with deficit reduction into proper perspective.

Spending on farm support programs has been the most rapidly growing major category of Federal spending, increasing from $4 billion in 1981 to $25.8 billion in 1986. The desire to assist farm families during a period of severe economic difficulty accounts for much of this increased spending. However, total farm support spending has now reached a level that would finance a direct payment of more than $16,000 annually to each of 1.6 million farm families, or an annual payment of more than $42,000 for each of the 619,000 commercial-sized farms in the United States. By comparison, median income for all U.S. families is less than $30,000. Moreover, most farmers receive little or no financial assistance from Federal farm price-support programs. Of the 34 percent of American farmers who did receive direct assistance in 1985, one-fifth received almost 70 percent of the payments. In the cotton program in 1986, 12 percent of the participants received more than one-half of the total payments, with some receiving millions of dollars. The 50 largest rice producers will each receive more than $1 million in 1986 payments.

As is discussed in Chapter 5, Federal farm support programs are not only expensive to the taxpayer and ineffective in channeling support to the most needy, but they also generate huge economic waste. Because current Federal programs link financial support to farm output, they encourage production of crops for which there is no effective market. Appropriate reform of farm support programs can

reduce economic waste and lower Federal expenditures while maintaining income support for distressed farm families.

The Federal Government continues to subsidize activities for which the original rationale has disappeared or where no persuasive case for Federal involvement can be made in the first place. For example, mass transit systems can provide important benefits in the local areas where they operate, but generally no good rationale exists for Federal subsidies that distort local choices concerning the construction and operation of such systems. The Administration proposes elimination of discretionary grants for new mass transit systems.

Another example is the Rural Electrification Administration (REA), which has gone well beyond its original purpose of encouraging extension of electrical supply in rural areas. Since 1935, when the Agency was founded, farms receiving electric service through REA have increased from 12 percent of all farms to 99 percent. Rural telephone service (added as an REA responsibility in 1949) now extends to 95 percent of all farms. REA's original goals have been achieved, but it lives on, offering subsidized loans to electric cooperatives serving prosperous urban and suburban areas such as Atlanta, Georgia; Denver, Colorado; Manassas, Virginia; and Minneapolis, Minnesota. Loans have also been provided for electrification in exclusive resorts such as Aspen, Steamboat Springs, and Vail in Colorado, and Hilton Head Island, Kiawah Island, and Myrtle Beach in South Carolina. The Administration proposes to curtail these practices by imposing appropriate limits on REA lending and loan guarantees.

### OTHER REVENUE MEASURES

The Administration's proposals for deficit reduction also involve increasing Federal revenues by levying equitable user fees for Federal services provided to identifiable beneficiaries, by selling some federally owned assets, and by instituting other relatively minor programs to generate revenues. Both user fees and asset sales serve the dual purpose of raising revenue for the Federal Government and encouraging economic efficiency. Efficiency in the use of services provided by the Federal Government that are similar to services provided by private business is encouraged when the user of the service, rather than the general taxpayer, pays the cost of providing the service. Economic efficiency is also often advanced when business-like operations are shifted from the Federal Government to the private sector, where the profit motive and force of competition promote efficiency.

Major Administration proposals concern increased user fees for guaranteed student loans and for home loans guaranteed by the Veterans Administration (VA) and the Federal Housing Administration (FHA), and for mortgage-backed securities guaranteed by the Gov-

ernment National Mortgage Association (GNMA). Costs associated with defaults on guaranteed student loans have run well ahead of revenues from current fees—a situation that should be corrected. The same is true for VA home loans. For FHA and GNMA, evidence suggests that their association with the government provides an implicit subsidy that allows them to charge less for their services than a private business would have to charge for the same service.

In addition to continuing sales from the Federal Government's loan portfolio, major proposals for asset sales include the sale of Amtrak and the phaseout of subsidies to Amtrak, sale of the Naval Petroleum Reserve, and sale of the Alaska Power Administration. Transfer of these programs to the private sector would lead to more efficient operation, as well as generating revenue.

Asset sales are a one-time source of revenue. Indeed, sales of loans from the Federal portfolio and sales of government enterprises that earn a profit increase current revenue at the expense of future revenue. Such asset sales effectively transfer part of the task of deficit reduction from the present to the future. If adequate progress is being made in attacking the core of the deficit problem, however, partial transfer of this problem into the future through asset sales may be desirable.

Once the budget is balanced on a cash basis, the nominal stock of Federal debt will not grow and the ratio of Federal debt to GNP will decline. As the ratio of Federal debt to GNP declines (assuming constant interest rates), the share of net interest expense in GNP will decline at a moderate pace. This development will allow room for other categories of Federal spending to rise, absolutely and as a share of GNP, without any increase in tax rates. Lost revenues from prior asset sales can be made up under these circumstances without absolute cuts in spending programs or tax rate increases. This strategy works, however, only if asset sales play a limited role in the total strategy of deficit reduction, as they do in the President's 1988 budget, and if the other elements of that strategy are pursued consistently and effectively.

### BUDGET CONCEPTS AND FISCAL AUTHORITY

Gramm-Rudman-Hollings significantly alters the congressional budget process. It imposes targets for the Federal budget deficit in each of fiscal years 1986–91 as well as a timetable and procedures for meeting these targets. A number of other proposals have recently been made to reform the process by which budget decisions are deliberated and implemented as well as to change the coverage and content of the budget itself. Proposals to modify the coverage and content of the Federal budget are motivated by the concern that the

current budget does not adequately reflect the economic costs of Federal credit programs or capital investments made by the government. The line-item veto and a balanced budget amendment to the Constitution are proposed reforms of the budget process that are motivated by the fact that, absent the temporary Gramm-Rudman-Hollings procedures that expire in 1991, congressional decisions to increase outlays are not directly related to decisions affecting expected tax receipts.

*Federal Credit Programs*

The accounting for Federal credit programs is a major weakness in the present budget. Currently, the budget costs of direct loan programs are measured by the net outlays of those programs, that is, total disbursements and interest paid minus repayments and interest received. Congressional appropriations for direct loan programs are generally only necessary when new disbursements exceed repayments. Loan guarantees do not result in recorded outlays except in case of default. A loan guarantee represents a contingent liability of the government that induces lenders to invest in particular loans, thus allocating capital for federally determined purposes. Thus, a loan guarantee may provide as large a subsidy as a direct loan obligation.

The budget neither measures nor controls the most salient aspect of Federal credit—the size of the subsidy offered the borrower. Without some means of measuring and controlling this subsidy, neither the executive branch nor Congress can make informed decisions about Federal credit programs, either by comparing one with the other or by comparing them with noncredit expenditure programs.

Some inadequacies of the budget treatment of Federal credit programs were rectified by introduction of the Federal credit budget in 1980. The Federal credit budget measures direct loan obligations and guaranteed loan commitments. Although it is a step forward, the credit budget does not restrain the total volume of Federal credit effectively. Only about 55 percent of the credit budget totals for 1985 were capped by appropriation act limitations. Moreover, the credit budget does not measure the subsidy costs, nor does it directly restrict the level of subsidy that a program offers the borrower.

The Administration proposes to change the budget treatment of direct loans and loan guarantees. Legislation for this purpose will be sent to the Congress in the spring of this year. The Administration's proposal would divide the face value of a new direct loan into two parts: the market value of the loan and the present value of Federal subsidies. A Federal Credit Revolving Fund would be established under the direction of the Treasury. Before an agency could make direct loans, Congress would have to appropriate funds to that

agency for the provision of direct loan subsidies. As loans were made, the agency would provide the Fund with the information required to estimate the present value of the direct loan subsidies. The central revolving account would be charged for the market value, or nonsubsidized component, of direct loans. The agency would then be charged for the subsidy component of direct loans.

In the case of loan guarantees, Congress would first make appropriations to the agency. As the agency granted loan guarantees, it would provide the Fund with the information necessary to estimate the present value of the guarantee subsidies. The agency would be charged for the value of the subsidy and would also transmit to the Fund any fees paid by the borrowers. The Fund would then assume the contingent liability for the guarantees.

To establish an objective measure of direct loan subsidies, newly made direct loans would be sold to the public without recourse. Similarly, new loan guarantees would be reinsured with private insurers.

Adoption of the Administration's proposal would ensure that the budget reflected the true economic costs of Federal credit programs. It would provide the President and Congress with the information necessary to make informed decisions about the allocation of budget resources to these programs.

*A Capital Budget*

The Federal budget is a comprehensive statement of expected cash outlays and cash receipts. The budget includes both operating and investment outlays, but does not report separate operating and capital budget subtotals. However, details of Federal investment outlays are presented in a special analysis that is published with the budget. The comprehensive outlay and receipt totals are indispensable for evaluating the effect of Federal policies on the level and composition of aggregate economic activity. The unified budget deficit, which is the difference between total Federal outlays and receipts, figures prominently in macroeconomic analysis precisely because it measures the government's demand for private domestic and foreign saving as well as the change in the outstanding stock of government debt.

For many years, proposals have been made to separate the unified Federal budget into an operating budget and a capital budget. Although the proposals differ in important respects, all share the essential feature that Federal receipts and outlays would be disaggregated into their operating and capital components. In general, investment outlays would not be charged against operating receipts in the calculation of the operating deficit, and only the subsidy component of direct loans and loan guarantees would be considered an operating outlay. Investment expenditures and the market value of direct loans

would constitute the outlays used in calculating the capital budget deficit.

Several arguments have been made in favor of a capital budget. First, it would provide the information and incentives necessary to promote economically efficient government capital planning. Second, borrowing to finance capital outlays would spread the cost of government investments more equitably among current and future beneficiaries and thus link the payment for a government investment with its use. For this reason, it has been argued that operating and capital budget subtotals should be calculated separately so as to distinguish between Federal borrowing that finances current operations from borrowing that finances capital investments yielding future benefits.

Opponents argue that the capital budget would not promote economically efficient capital planning. Because capital outlays would not be deducted from receipts in the calculation of the operating deficit, the constraint on capital outlays might be relaxed to such an extent that budget decisions would be biased in favor of capital spending. Furthermore, technical disagreement over the definition of capital outlays would likely occur, such as whether expenditures for research and development or education should be included in the capital budget and thus not be charged against receipts in calculating the operating budget deficit. More generally, opponents argue that a unified budget is needed to hold public officials accountable for appropriations of tax receipts. Separate capital and operating budgets would, according to this view, invite manipulation to hide and expand Federal spending.

It is important that the long-term benefits of government capital investments be adequately assessed against the current budget cost of the resulting capital outlays. However, it is at least equally critical that budget deliberations take into account the effect of proposed policies on total outlays, receipts, and the unified budget deficit.

*The Line-Item Veto*

The line-item veto would authorize the President to veto individual line items in appropriation bills, subject to the current provisions for overriding a veto of any bill. Governors in 43 States now have such authority. Congress has approved such authority for the Governors of the Commonwealth of Puerto Rico and the Trust Territories and for the Mayor of the District of Columbia—but not for the President.

For more than a century, Congress has rejected Presidential requests for this authority in order to maintain the opportunity to package spending proposals that the President would otherwise veto in broader appropriations that the President would approve. Appropriations are presented to the President in only 13 general appropriation bills. Indeed, last year Congress did not pass a single one of the 13

appropriation bills, but instead passed one 389-page omnibus spending bill. Because Congress had not completed action on the annual appropriation bills, the President was compelled by law to shut down the Federal Government. Such abrogation of a responsible budget process by Congress not only discourages careful, prudent legislation—it encourages excessive spending and waste.

Effective use of the line-item veto would change the composition and level of Federal expenditure. A Member of Congress is elected by voters in a specific congressional district or State, while the President is elected by the voters of the Nation. As a consequence, a Member of Congress has stronger preferences for programs and projects that benefit his or her regional constituency, especially because only a fraction of the cost of such programs and projects are borne by his or her constituency. The expected result of granting approval for a line-item veto would be a decrease in expenditures on programs and projects whose regional benefits do not exceed the cost to the Nation's taxpayers. This result should be a sufficient basis for early approval of Presidential authority for a line-item veto.

*Balanced Budget Amendment*

The President has endorsed the concept of a balanced budget/tax limitation amendment to the Constitution. The objective is to change the rules by which decisions are made to borrow or to increase the size of Federal outlays and receipts relative to national income. Although several amendments have been proposed, two that have been considered in the Senate share the following provisions:

- A requirement that total outlays be no greater than total receipts, unless three-fifths of the whole number of both Houses of Congress decide otherwise in a vote devoted solely to that subject;
- A prohibition on increases in the public debt, absent approval by three-fifths of the whole number of both Houses of Congress;
- A requirement that all or some revenue-increasing bills be enacted by a majority of the whole number of both Houses of Congress by roll call vote; and
- The authority for Congress to waive these requirements in the event of war.

Approval of this proposed amendment would be a recognition that each generation may need to bind itself to responsible fiscal decisions in the interests of the current and future American community.

The line-item veto and a balanced budget amendment cannot substitute for the hard choices necessary to restrain the growth of Federal expenditure and to reduce the Federal deficit. Early approval of these proposals, however, could force a resolution of the choices necessary to resolve major near-term fiscal issues.

## TAX REFORM

This section assesses the economic effects of the Tax Reform Act of 1986. The purpose of this assessment is twofold: to forecast the effects that tax reform will have on future macroeconomic activity and, by demonstrating the substantial benefits of tax reform, to guard against possible future changes in the tax code that would undo the important progress that has been made.

### OVERVIEW

The Tax Reform Act of 1986 fundamentally alters the structure of the Federal income tax. It broadens the personal and corporate income tax bases and substantially lowers tax rates. These changes will significantly alter private incentives and, accordingly, will influence the economy's performance through three principal channels:

- Lower marginal tax rates on personal income, in conjunction with a broader tax base, will increase labor effort and reduce the exploitation of tax loopholes.
- More uniform tax rates on income from alternative capital investments will induce a more efficient allocation of investment funds.
- A somewhat higher overall marginal tax rate on capital income will modestly reduce the economy's long-run capital intensity.

The analysis in this section indicates that tax reform will significantly improve the economy's long-run performance. This improvement will come from several sources, most of which have not been explicitly quantified. Estimates that have been made, however, suggest that the Nation's output of goods and services will permanently increase by approximately 2 percent because of the long-run consequences of tax reform.

This section begins with a discussion of the conditions leading to tax reform and a brief explanation of the importance of marginal tax rates for economic efficiency. The chapter then turns to an assessment of the Tax Reform Act of 1986 (TRA). This assessment begins with a description of the major provisions of TRA and an analysis of their microeconomic implications. Finally, the chapter explores the implications of TRA for long-run economic growth and short-run macroeconomic activity.

### THE CONDITIONS LEADING TO TAX REFORM

Despite legislated "tax reductions" during the 1960s and 1970s, marginal tax rates rose substantially as inflation pushed taxpayers into higher tax brackets. As is shown in Table 2–1, a family of four with median earnings in 1965 paid 17 cents in tax on the last dollar

of income earned. Such a family, therefore, had a marginal tax rate of 17 percent. The marginal tax rate for a similar family in 1980, in contrast, had risen to 24 percent due to bracket creep. The growth in marginal tax rates was more dramatic at higher incomes: a family with twice the median income in 1980 had a marginal tax rate almost double that of a similar family in 1965.

TABLE 2-1.—*Marginal personal income tax rates for four-person families, selected years, 1965-88*[1]

[Percent]

| Year | Family income | | |
|---|---|---|---|
| | One-half median income | Median income | Twice median income |
| 1965 | 14 | 17 | 22 |
| 1970 | 15 | 20 | 26 |
| 1975 | 17 | 22 | 32 |
| 1980 | 18 | 24 | 43 |
| 1986 | 14 | 22 | 38 |
| 1988 (TRA) | 15 | 15 | 28 |

[1] Excludes social security taxes and State and local income taxes.
Source: Department of the Treasury, Office of Tax Analysis.

For income from capital gains, inflation not only increases the statutory rate of tax because of bracket creep, but it also causes the effective tax rate to exceed the statutory tax rate. This phenomenon was particularly important in the 1970s, when inflation rates were high. In 1979, for example, a 1-year investment yielding a 10 percent nominal capital gain yielded, after 9 percent inflation, a 1 percent real capital gain. Federal taxes, however, are levied on nominal capital gains. A taxpayer in the 70 percent tax bracket who received a 10 percent nominal capital gain, therefore, earned a 7.2 percent nominal after-tax return (taking the 60 percent capital gains exclusion into account). After 9 percent inflation, this translates to a minus 1.8 percent real after-tax return. Hence, for this hypothetical investor, inflation increased the effective tax rate on the 1 percent real pretax capital gain from 28 percent to 280 percent. This phenomenon is entirely independent of bracket creep and, for the taxation of capital gains, is quantitatively much more important.

Inflation also distorts the taxation of corporate bond interest. The nominal rate of return on bonds includes an inflation premium that is not distinguished, for tax purposes, from the real return. Corporations can deduct nominal bond interest paid from their taxable income and individual bondholders must include nominal bond interest received in their taxable income. Inflation, therefore, decreases (increases) the effective rate of tax on debt-financed corporate invest-

ment if the corporate tax rate exceeds (is less than) the marginal tax rate of the marginal bondholder. Because of the offsetting effects of the corporate and personal tax systems, inflation affects the taxation of real corporate bond interest much less than it does the taxation of real capital gains.

The high inflation rates of the 1970s distorted the taxation of capital income in still another way. Deductions for the depreciation of a capital asset, which are properly subtracted from gross capital income to determine taxable income, are set in accordance with the purchase price of the asset. Inflation therefore reduces the real value of depreciation deductions. This phenomenon, in addition to the taxation of inflationary capital gains, caused the effective rate of tax on equity-financed investments to rise substantially during the 1970s.

It became increasingly apparent in the late 1970s that these inflation-induced increases in effective tax rates were stifling private incentives to work and to save and were impeding economic growth. To restore private production incentives, therefore, the Administration proposed, and Congress passed, the Economic Recovery Tax Act of 1981. ERTA called for a phased reduction in personal tax rates that, when completed in 1984, substantially reduced personal marginal tax rates (see the 1986 tax rates in Table 2–1). The top marginal tax rate was reduced from 70 to 50 percent. ERTA also extended eligibility for individual retirement accounts (IRAs) to individuals with other pension plans. Beginning in 1985, the rate schedule, the zero bracket amount, and the personal exemption were indexed to the price level. ERTA also included substantial investment incentives. Although these incentives were scaled back somewhat by TEFRA, the Tax Equity and Fiscal Responsibility Act of 1982, ERTA and TEFRA together significantly lowered the effective tax rate on income from most capital investments.

ERTA-TEFRA substantially reduced marginal tax rates but left two particularly undesirable features of the income tax. First, ERTA-TEFRA's investment incentives increased the opportunities for tax avoidance. Second, ERTA-TEFRA did not help to equalize marginal tax rates on alternative capital investments. In particular, investments in corporate equipment retained their tax advantages over investments in corporate structures. Uneven tax rates on income from alternative capital investments result in a misallocation of capital and a lower value of output than would otherwise be obtainable.

To correct these problems and others, and to reduce marginal tax rates further, the President submitted to Congress detailed proposals for income tax reform in May 1985. These proposals became the basis for congressional deliberations that culminated in TRA. This law differs somewhat from the President's proposals but retains their

overall thrust. TRA lowers marginal tax rates, broadens the personal and corporate tax bases, and helps to equalize marginal tax rates on alternative income-producing activities.

## MARGINAL TAX RATES AND ECONOMIC EFFICIENCY

Marginal tax rates—the rates paid on the last dollar earned from income-producing activities—influence the incentives to engage in productive activities and, hence, are extremely important elements of the tax system. The marginal tax on labor income, for example, drives a tax wedge between the value of output that an additional unit of labor produces and the after-tax wage received by workers, thereby discouraging additional labor effort. A reform of the tax system that lowers the marginal tax rate on labor income, while raising the same total revenue, therefore increases labor effort and economic well-being. Economic well-being is increased because the value of total output is increased by more than the total value of leisure is decreased. Likewise, the marginal tax on investment income drives a tax wedge between the pretax return to investment and the after-tax return to saving. Additional saving that would be induced by a lower marginal tax rate on capital income increases the total value of output by more than it increases the inconvenience cost of postponing consumption.

A uniform tax on investment income distorts the overall savings decision. A nonuniform tax on capital income introduces an additional distortion in the allocation of saving and investment. Because investment funds tend to be directed toward assets with the highest expected after-tax returns and because the return to a particular asset type declines with its quantity, alternative investments tend, in equilibrium, to yield equal after-tax returns. Hence, the pretax return on a particular investment tends to be higher, the higher is the effective marginal tax rate. Unequal marginal tax rates on alternative capital investments, therefore, result in an output loss. That is, the value of output would be increased if investment funds were shifted away from investments with low marginal tax rates and low pretax returns, and toward investments with high marginal tax rates and high pretax returns. The greater are the differentials among marginal tax rates on alternative capital investments, the greater is the resulting output loss.

High marginal tax rates on labor income also encourage excessive consumption of untaxed employee fringe benefits. A worker with a 30-percent marginal tax rate, for example, gives up 70 cents in take-home pay for each dollar of (untaxed) fringe benefits he or she receives. The worker, or the worker's union, therefore rationally seeks

an amount of fringe benefits that have a value, at the margin, equal to only 70 percent of their true cost.

More generally, high marginal tax rates increase incentives to engage in tax avoidance and evasion. Tax avoidance occurs when taxpayers make legitimate investment or consumption choices that are influenced by the desire to reduce tax liabilities. As was demonstrated for the case of untaxed employee fringe benefits, tax avoidance leads to an inefficient allocation of resources and is apt to increase with the marginal tax rate on ordinary income. Tax evasion, conversely, is the failure to comply with the tax laws. The incentive to hide income from the tax authorities, so as to evade taxes, increases with the marginal tax rate. Tax evasion, like tax avoidance, ordinarily results in wasteful expenditures of time, energy, and tangible resources.

## A MICROECONOMIC ANALYSIS OF THE TAX REFORM ACT

### *The Personal Income Tax*

TRA significantly lowers tax rates on personal income. When the law is fully effective in 1988, two tax brackets, set at 15 and 28 percent, will replace the 14 that ranged from 11 to 50 percent. The 15-percent bracket and the personal exemption are phased out for high-income returns, which results in an implicit 33-percent tax rate for a broad income range. As is shown in Table 2–1, TRA reduces marginal tax rates to levels that are similar to those that prevailed in 1965.

These rate reductions are made possible, in part, by TRA's base-broadening measures. TRA broadens the personal tax base, or taxable personal income, to include the following: all long-term capital gains, State and local sales taxes, IRA contributions for high-income individuals with employer-provided pension plans, nonmortgage consumer interest payments, miscellaneous itemized deductions less than 2 percent of adjusted gross income, net losses from passive investments, and net losses from active real estate investments for high-income taxpayers. These base-broadening measures are partially offset by substantial increases in the standard deduction and personal exemption. By 1988, the personal exemption is nearly doubled and the standard deduction is increased 36 percent for joint returns and 21 percent for single returns.

An important feature of TRA is its strong limitations on tax-sheltered activities, which have grown greatly over the past several years. Two factors are largely responsible for the recent growth in tax shelters; first, the high inflation rates of the late 1970s and early 1980s increased the real value of nominal interest deductions on leveraged investments, and second, ERTA-TEFRA substantially accelerated depreciation deductions. These factors increased the opportunities for

claiming early losses in exchange for later capital gains that have the advantages of tax deferral and a lower tax rate.

TRA limits tax shelters directly and indirectly. The elimination of the capital gains preference, the deceleration of tax depreciation deductions, more stringent limitations on investment interest deductions, and the lowering of marginal tax rates all serve indirectly to make tax shelters less attractive. Moreover, any remaining tax avoidance opportunities are subjected to TRA's provisions concerning passive business losses and real estate losses. In particular, net losses from passive business investments and real estate investments for high-income taxpayers cannot be deducted from ordinary income; they must be carried forward and deducted from net income from like activities in later years.

These tax-shelter limitations not only make the personal income tax more equitable, but they should also result in more economically efficient investment decisions. Investments that previously provided opportunities for tax avoidance are put on a more equal footing with other investments. Investment funds, therefore, should have a greater tendency to flow to their most highly valued uses.

The elimination of the nonmortgage consumer interest deduction should also improve the current allocation of investment funds. Consumer durables yield a flow of services that, unlike alternative investments yielding monetary income, is untaxed. By disallowing nonmortgage consumer interest deductions, TRA partially eliminates the tax preference that is currently afforded to consumer durables. TRA, therefore, puts consumer durables on a more equal footing with alternative investments and should lead to more efficient investment decisions.

Allowing State and local taxes to be deducted from the Federal income tax base is both inefficient and inequitable. It is inefficient because it reduces the perceived cost of State and local government services and, except possibly in cases where State spending generates appreciable spillover benefits, encourages excessive State and local spending. It is inequitable because it causes residents of low-tax localities, who enjoy relatively small amounts of State and local government services, to pay a disproportionate share of Federal taxes. TRA ameliorates these problems in two ways: it disallows the State and local sales tax deduction, and, by lowering the marginal Federal tax rate, it lowers the value of other State and local tax deductions.

TRA disallows IRA deductions for high-income individuals with employer-provided pension plans. However, TRA still allows most working individuals to deposit $2,000 (nondeductible) each year in IRAs and defer tax on accrued interest until the funds are withdrawn

at retirement. This tax advantage is substantial, accounting for a large portion of the tax savings afforded by deductible IRAs.

Although TRA significantly limits itemized deductions, it substantially raises the standard deduction. As a result, TRA is estimated to reduce the number of itemized personal Federal income tax returns in 1988 by 11.5 million, thereby yielding an approximate $1.3 billion reduction in compliance costs.

*Equity.* TRA will cut total personal income taxes by about 6.6 percent in 1988. Table 2-2 gives the percentage tax cut for eight income classes. The estimates are based on an expanded definition of income that equals adjusted gross income plus such items as excluded capital gains, passive business losses, and tax-exempt bond interest.

TABLE 2-2.—*Effects of the Tax Reform Act of 1986 on Federal tax liabilities and average Federal tax rates, by income class, 1988*

| Income class (1986 dollars)[1] | Percent change in income tax liability | Average tax rate (percent) | |
|---|---|---|---|
| | | Prereform | TRA |
| 0 to 10,000 | −56.2 | 2.0 | 0.9 |
| 10,000 to 15,000 | −27.8 | 5.4 | 3.9 |
| 15,000 to 20,000 | −14.8 | 7.0 | 6.0 |
| 20,000 to 30,000 | −8.5 | 8.9 | 8.1 |
| 30,000 to 50,000 | −7.1 | 11.0 | 10.3 |
| 50,000 to 100,000 | −.9 | 13.9 | 13.7 |
| 100,000 to 200,000 | −1.0 | 17.4 | 17.1 |
| 200,000 and over | −.9 | 13.6 | 13.4 |
| ALL INCOME CLASSES | −6.6 | 10.3 | 9.6 |

[1] The income concept (modified expanded income) is one of many possible income classifiers and was used by the Joint Committee on Taxation to present the distributional effects of the Tax Reform Act of 1986. An alternative measure, "economic income," was used in the Treasury Department's *The President's Tax Proposals* in 1985.

Note.—Distributions reflect most but not all of the provisions of the individual income tax code.

Source: Department of the Treasury, Office of Tax Analysis.

The percentage tax cut under TRA is largest for low-income returns. The number of poor families paying Federal income tax is estimated to fall by 4.3 million in 1988 under TRA. With one small exception, the estimated percentage tax cut under TRA steadily falls for higher income returns. Thus, these estimates indicate that TRA actually increases the effective progressivity of the personal Federal income tax despite a less graduated rate structure. This result is shown in the last two columns of Table 2-2, which give the estimated average tax rate for each income class under TRA and the prereform tax law. TRA cuts the average tax rate much more for taxpayers with income less than $50,000 than it does for higher income taxpayers.

Table 2-2 concerns only personal Federal income taxes. Because all taxes are ultimately paid by individuals, a complete analysis of tax

incidence would allocate undistributed corporate income and Federal corporate taxes to the various income classes. Exactly how this should be done, however, is uncertain. Current evidence is not conclusive, but it suggests that part of the corporate tax burden is borne by workers and that the majority is borne by owners of capital. If this inference is correct, it would imply that high-income taxpayers, who earn a disproportionate share of capital income, bear a relatively large share of the corporate tax burden. Because TRA shifts 6.6 percent of the individual income tax burden to corporations, it would follow that a proper imputation of corporate taxes to the various income classes would probably reinforce the conclusion that TRA enhances the effective progressivity of the Federal income tax.

TRA increases the long-run horizontal equity of the Federal income tax. Horizontal equity concerns the degree to which taxpayers with equal amounts of economic income have equal tax liabilities. Because of TRA's limitations on tax preferences, including the elimination of the capital gains preference, the limitations on tax shelters, and a stricter minimum tax, it substantially reduces the variation in the amount of tax paid by taxpayers with the same real income.

As does any significant reform of the tax system, TRA will cause a one-time change in asset values that will redistribute wealth. Existing assets that received tax preference under ERTA-TEFRA and have their tax preferences curtailed under TRA suffer capital losses. Contrariwise, any existing assets that are taxed less heavily under TRA than they were under ERTA-TEFRA enjoy capital gains. Special transition rules make these changes in asset values less severe in some cases. The deductions for passive business losses and real estate losses attributable to assets acquired prior to tax reform, for example, are phased out gradually over 4 years. The same is true for deductions of interest payments on preexisting nonmortgage loans.

This phenomenon of changing asset values is one reason why changes in the tax law should be infrequent and implemented only for compelling reasons. Investments tend to be inherently risky; further riskiness introduced by frequent changes in the tax law unnecessarily destabilizes the business environment.

*Business Taxes*

The proper measurement of economic income from investments in real assets requires that deductions be made for the decline in real asset values attributable to depreciation. Since 1954, tax law has allowed investors to deduct for more rapid depreciation on most assets than actually occurs. Accelerating depreciation in this manner lowers the cost of capital, which is defined as the minimum pretax investment return that is profitable. The cost of capital has also been reduced by the investment tax credit, which applied primarily to equip-

ment assets and allowed investors to deduct a percentage of an asset's purchase price immediately from tax liabilities.

TRA repeals the investment tax credit, allows less accelerated depreciation, and lowers the corporate tax rate from 46 to 34 percent. These provisions taken together have two general effects: they tend to raise the cost of capital overall, and they tend to equalize the cost of capital for alternative capital investments. The latter effect is due primarily to more equal effective rates of tax on investments in corporate equipment and corporate structures.

Table 2-3 gives the estimated percent change in the cost of capital brought about by TRA for three sectors of the economy and for various assets within the corporate sector. For the corporate sector, the calculations take into account corporate, property, and personal taxes. Investments are taxed differently depending on whether they are financed with debt or equity. Table 2-3 gives results for three different modes of finance; for debt, equity, and a combination of debt and equity.

TABLE 2-3.—*Percent change in cost of capital under the Tax Reform Act of 1986*

| Sector | Financing mode | | | | |
|---|---|---|---|---|---|
| | Debt | Equity | | Debt and equity | |
| | | Old view[1] | New view[1] | Old view[1] | New view[1] |
| Corporate sector | 48.6 | −4.8 | 4.7 | 2.8 | 11.9 |
| Equipment | 197.3 | 26.6 | 43.7 | 43.7 | 62.2 |
| Nonresidential structures | 44.5 | 1.0 | 10.6 | 7.7 | 16.6 |
| Public utilities | 47.9 | 6.5 | 16.2 | 13.3 | 22.2 |
| Residential structures | 24.2 | −5.7 | 2.1 | −.4 | 6.5 |
| Inventories | 21.1 | −18.6 | −11.0 | −13.0 | −5.8 |
| Nonresidential land | 19.3 | −18.0 | −10.6 | −12.5 | −5.5 |
| Residential land | 16.5 | −17.0 | −9.9 | −11.6 | −5.1 |
| Noncorporate business sector | 4.7 | .6 | .6 | 1.9 | 1.9 |
| Owner-occupied housing | 3.3 | 1.6 | 1.6 | 2.2 | 2.2 |
| Total business | 22.1 | −2.8 | 3.0 | 2.4 | 7.4 |
| TOTAL | 16.8 | −2.1 | 2.7 | 2.3 | 6.2 |

[1] See text for explanation of the old view and the new view of dividend taxation.

Note.—Changes are relative to the prereform tax law. The computations take into account corporate taxes, property taxes, and personal taxes at all levels of government.

Source: Department of the Treasury, Office of Tax Analysis.

As is shown in the first column of the table, TRA substantially increases the cost of debt-financed capital investments. This result follows largely because the value of interest deductions falls with the fall in corporate and personal tax rates.

There are currently two views in the economics profession concerning the relative importance of taxes on capital gains and on dividends for determining the cost of equity capital. The "new view" of dividend taxation maintains that taxes on capital gains are very important, while taxes on dividends are nearly irrelevant, for determin-

ing the cost of equity capital. The "old view" of dividend taxation, conversely, maintains that taxes on dividends, as well as taxes on capital gains, are important for the cost of equity capital. It follows that TRA, which raises the marginal tax rate on capital gains and lowers the marginal tax rate on dividends, increases the cost of capital more under the new view of dividend taxation than under the old view. No consensus has formed as to which of these two views is correct. Although the new view gained wide acceptance when first introduced, recent empirical evidence does not uniformly support either view over the other.

The estimates in Table 2–3 indicate that the overall cost of equity-financed investment falls under the old view and rises under the new view. The cost of corporate equipment rises much more than the cost of corporate structures. This finding also applies to the noncorporate sector and is attributable to the repeal of the investment tax credit. Because TRA reduces corporate and personal tax rates, the cost of capital falls dramatically for nondepreciable capital assets, such as inventories and land.

Historically, approximately one-third of investment is financed with debt and two-thirds with equity. The last two columns of Table 2–3 use these weights to obtain overall percentage changes in the cost of capital for both views of dividend taxation. These calculations indicate that the overall cost of capital rises by 2.3 to 6.2 percent. Because debt finance becomes relatively more expensive under TRA, and the financing shares are not allowed to respond to this change, these estimates tend to overstate the rise in the cost of capital. On the other hand, these estimates do not incorporate tax-shelter limitations or changes in accounting rules, provisions of TRA that raise the cost of capital.

TRA substantially evens the cost of capital across assets within each sector. This effect is shown in the first part of Table 2–4, which concerns the variation in the cost of capital within the corporate sector. For every asset, TRA is estimated to reduce the magnitude of the percentage deviation of the cost of capital from the overall average cost of capital in the corporate sector. Because relative costs of capital within each sector depend primarily on the investment tax credit and depreciation allowances, and these features of the tax law are the same for the corporate and the noncorporate sectors, these conclusions also apply to the noncorporate sector.

However, TRA does not alleviate the intersectoral distortions in the capital income tax, as is shown in the second part of Table 2–4. The corporate sector is taxed most heavily, followed, in order, by the noncorporate sector and owner-occupied housing.

TABLE 2-4.—*Within-sector and between-sector variation in the cost of capital*

| Sector | Old view[1] | | New view[1] | |
|---|---|---|---|---|
| | Prereform | TRA | Prereform | TRA |
| | Percent deviation from average corporate cost of capital | | | |
| Corporate sector: | | | | |
| Equipment | −34.9 | −8.9 | −37.2 | −8.9 |
| Nonresidential structures | −6.9 | −2.5 | −6.3 | −2.3 |
| Public utilities | −8.8 | .5 | −7.6 | .9 |
| Residential structures | 21.9 | 18.1 | 24.8 | 18.8 |
| Inventories | 21.4 | 2.7 | 21.5 | 2.4 |
| Nonresidential land | 26.0 | 7.4 | 27.0 | 7.3 |
| Residential land | 35.4 | 16.5 | 37.9 | 17.0 |
| | Percent deviation from overall average cost of capital | | | |
| Corporate sector | 16.3 | 16.8 | 7.2 | 12.9 |
| Noncorporate business sector | −5.9 | −6.2 | .5 | −3.6 |
| Owner-occupied housing | −17.6 | −17.7 | −12.0 | −15.3 |

[1] See text for explanation of the old view and new view of dividend taxation.

Note.—Assumes financing is one-third debt and two-thirds equity.

Source: Department of the Treasury, Office of Tax Analysis.

A recent study indicates that eliminating the uneven taxation of assets within sectors, and retaining the intersectoral distortions, would cause investment funds to be reallocated so as to increase real net national product—real GNP less capital depreciation—permanently by about 0.2 percent. Because TRA reduces the within-sector variance in the cost of capital by about 60 percent, this finding suggests that this particular feature of TRA will, after a period of adjustment, permanently increase net national product by about 0.1 percent.

This estimate of the neutrality gains under TRA omits two important factors. First, the cost-of-capital estimates do not take into account the possible "churning" of assets. Churning occurs when a used asset is sold and redepreciated, for tax purposes, by the new owner. Under ERTA-TEFRA, this investment strategy was viable only for assets that have an active resale market, most particularly commercial structures and rental housing. TRA's limitations on tax shelters substantially reduce the tax preference afforded to such assets. Therefore, the quantified neutrality gains under TRA are mismeasured to the extent that TRA's neutrality gains associated with churnable structures are different than TRA's neutrality gains associated with other structures. Second, TRA increases the relative tax preference given to intangible assets, such as expenditures on marketing, advertising, and research and development. This result follows from the fact that TRA increases the overall cost of tangible capital, and income from intangible capital assets is entirely untaxed (at the margin) at the corporate level under both ERTA-TEFRA and TRA.

Because intangible assets are not included in the cost of capital computations, the quantified neutrality gains from TRA tend to be overstated.

Under both TRA and the prereform tax law, corporations are able to deduct interest payments. Because dividend payments are not deductible, equity finance is put at a disadvantage relative to bond finance, which presumably encourages corporate borrowing. The estimates of the cost of capital indicate that TRA reduces the tax advantage of financing corporate investments with debt rather than equity by about 25 percent. TRA, therefore, should reduce the incentive for corporate borrowing, thereby reducing bankruptcy costs and other economic costs attributable to the issuance of corporate debt.

Under TRA as well as the prereform tax law, inflationary returns to capital investments are taxed. Also, depreciation allowances are not indexed for inflation. The cost-of-capital estimates in Tables 2–3 and 2–4 assume that the inflation rate is 3 percent. If the inflation rate should rise, the cost of capital would increase. Table 2–5 gives the percentage change in the cost of capital under TRA caused by a 5-percentage-point increase in the inflation rate. The overall cost of capital rises 3.2 percent under the new view of dividend taxation and 5.1 percent under the old view. Higher inflation would also exacerbate the tax-induced distortion in the choice of debt and equity finance. Inflation must be kept low, therefore, to maintain appropriate investment and financing incentives.

TABLE 2–5.—*The cost of capital under the Tax Reform Act of 1986 for an 8-percent inflation rate: Percent change from case of 3- percent inflation*

| Financing mode | Percent change |
|---|---|
| Debt | −13.8 |
| Equity: | |
| Old view[1] | 12.0 |
| New view[1] | 9.5 |
| Debt and equity: | |
| Old view[1] | 5.1 |
| New view[1] | 3.2 |

[1] See text for explanation of the old view and the new view of dividend taxation.

Source: Department of the Treasury, Office of Tax Analysis.

## TRA'S EFFECT ON LONG-RUN ECONOMIC GROWTH

It has been argued that TRA will lead to more efficient consumption and investment decisions and, for fixed aggregate quantities of productive inputs, will lead to an increase in output and economic well-being. This section analyzes TRA's effects on the long-run supplies of capital and labor and the implications for economic growth

and economic well-being. This section abstracts from issues concerning the composition of the capital stock and of output, topics that were discussed in earlier sections.

Table 2-6 gives the marginal tax rate (averaged over taxpayers) for all levels of government on labor income, capital income, and output under TRA and the prereform tax law. So as to estimate conservatively the long-run gains under TRA, the effective marginal tax rate on capital income assumes that the new view of dividend taxation applies. The average marginal tax rate on labor income takes account of the social security and medicare payroll taxes. In so doing, the linkage between these payroll taxes and future benefits is assumed to be sufficiently weak and uncertain that these payments are regarded as taxes. As is shown in the table, TRA lowers the marginal tax rate on labor and raises it on capital. The marginal tax rate on output, which is a weighted average of the marginal tax rates on labor and capital, falls 4.3 percent under TRA.

TABLE 2-6.—*Average marginal tax rates on labor income, capital income, and output*

| Item | Prereform | TRA |
|---|---|---|
| Labor income | 41.6 | 38.0 |
| Federal income tax | 25.8 | 21.7 |
| State and local income and sales tax [1] | 4.9 | 5.4 |
| Social security and medicare payroll tax [2] | 10.9 | 10.9 |
| Capital income [3] | 34.5 | 38.4 |
| Output [4] | 39.8 | 38.1 |

[1] Rate is the statutory tax rate (measured as State and local income and sales taxes divided by net national product in 1985) adjusted down in accordance with the deductibility of State and local taxes (except sales taxes under TRA) from the Federal income tax base.

[2] Social security and medicare payroll tax rate, for both employees and employers, multiplied by the portion of total labor income earned by individuals who are subject to the payroll tax at the margin.

[3] Includes taxes at all levels of government.

[4] Tax rate on labor income multiplied by labor's share of income (0.75) plus the tax rate on capital income multiplied by capital's share of income (0.25).

Sources: Department of the Treasury (Office of Tax Analysis) and Council of Economic Advisers.

The immediate effect of TRA will be to raise the net wage by 6.2 percent and lower the net return to saving by 5.9 percent. These changes will increase labor effort and depress saving as a portion of an enlarged pool of labor income. Relative to their baseline growth paths, therefore, labor input will increase and capital input may increase or decrease. Capital input is more likely to increase the more labor compensation, and hence total income, increases. In any case, the ratio of capital to labor is decreased.

The long-run economic effect of TRA is most appropriately measured in terms of real net national product. The effect of TRA on net national product depends on its effects on capital and labor input. Net national product is more likely to rise the more labor supply responds to the after-tax wage, and the less the supply of savings re-

sponds to the after-tax return to capital. The change in economic welfare, or individual well-being, depends on changes in consumption and leisure. Because changes in net national product and consumption may come at the expense of less leisure, net national product is an imperfect measure of economic welfare.

These factors have been analyzed in the context of a formal model of economic growth. The assumptions of the model, among them that population and productivity grow at constant rates, are extremely simple. None of the assumptions, however, is expected to lead to biased results. That is, no a priori reason exists to believe that plausible alternative assumptions would yield qualitatively different conclusions. The model therefore gives useful guidance, but the precision of its estimates should not be overstated.

Table 2–7 summarizes the results of this analysis. The point estimates of TRA's long-run effects are given in the first column of the table. Relative to their baseline growth paths, it is estimated that real net national product rises 2.2 percent, aggregate consumption rises 3.6 percent, capital input falls 0.4 percent, and labor input rises 3.1 percent. Because the value of consumption is raised more than the value of leisure is decreased, economic welfare is increased. In fact, TRA is estimated to increase individual well-being by as much as would an annual distribution, from an outside source, equal to 1.2 percent of net national product.

TABLE 2–7.—*The long-run simulated effect of the Tax Reform Act of 1986*[1]

| Item | Point estimate[2] | Plausible range[3] |
|---|---|---|
| Percent change in: | | |
| Net national product | 2.2 | 0.4 - 2.9 |
| Consumption | 3.6 | 1.5 - 4.3 |
| Capital input | −.4 | −4.6 - 1.3 |
| Labor input | 3.1 | 2.0 - 3.8 |
| Net capital return | −2.6 | −3.4 - −.6 |
| Net wage | 4.9 | 4.2 - 5.2 |
| Annual welfare change as percent of net national product | 1.2 | .4 - 1.9 |

[1] The simulation model is adapted from Lawrence H. Summers, "Capital Taxation and Accumulation in a Life Cycle Growth Model," *American Economic Review*, September 1981. The Summers model is extended to allow for endogenous labor supply and an unfunded social security system.

[2] Elasticity of substitution in production (ESP) = 0.75. Elasticity of intertemporal substitution (EIS) = 0.20. The uncompensated elasticity of labor supply is zero for all cases.

[3] ESP varies between 0.5 and 1.0 and EIS varies between 0.05 and 1.0.

Source: Council of Economic Advisers.

The point estimates incorporate assumptions about production technology and behavior that, while consistent with the existing empirical literature, are subject to error. The second column of Table 2–7 gives ranges for the long-run changes under TRA that correspond to alternative plausible assumptions. All plausible assumptions

lead to the conclusion that TRA increases economic welfare, net national product, and consumption.

An important factor that has been omitted in this analysis is TRA's effect on productivity growth. The returns to education come, in large part, through higher future wages. Because TRA decreases the marginal tax rate on labor income, the incentive to invest in education and other forms of human capital is increased. Hence, TRA should lead to more human capital investment and consequently to higher levels of productivity and output growth.

Also, the model underlying the long-run simulations assumes a closed economy with no trade. The tax rates reported in Table 2–6, however, reflect on TRA's effect on U.S. production costs relative to those of other countries. The average marginal tax rate on output in the United States is estimated to decline by 4.3 percent under TRA. Hence, while TRA may cause the composition of U.S. exports to shift toward labor-intensive goods and away from capital-intensive goods, it should not adversely affect the overall U.S. current account trade balance for given exchange rates and given after-tax returns to U.S. factors of production.

## THE SHORT-RUN MACROECONOMIC EFFECTS OF TRA

Although TRA will increase long-run economic growth, it may cause some short-run adjustment problems. First, TRA will slow the growth of investment to a modest extent as the capital stock adjusts to its new long-run equilibrium growth path. Hence, unless consumption or net exports takes up the slack, aggregate demand growth will be dampened somewhat. Second, TRA will cause a reallocation of investment that, in the short run, will cause some industries to grow less rapidly. Other industries, of course, will grow more rapidly under TRA, but possibly with a short lag.

### *Aggregate Investment*

The long-run simulation results illustrate the relationship between investment and changes in the long-run equilibrium capital stock. If the point estimates given in Table 2–7 are correct, TRA will induce a 0.4 percent decline in the long-run capital stock relative to its baseline growth path. This result would imply that net and gross investment also fall 0.4 percent in long-run equilibrium. In the transition to the long-run equilibrium, however, net investment would fall an additional amount equal to 0.4 percent of the current capital stock, or a total of about $50 billion. Assuming a short 5-year adjustment period, this result would imply that TRA will cause gross investment to fall by less than 2 percent from baseline in each of the next 5 years. After this initial period of adjustment, however, TRA should have a minimal effect on investment.

This method of estimating TRA's effect on short-term investment encounters two problems. First, it assumes that the economy is currently on the long-run equilibrium growth path associated with the substantial investment incentives included in ERTA-TEFRA. Recent estimates, however, suggest that only about one-half of the additional desired capital accumulation induced by ERTA-TEFRA has been completed. This finding implies that Table 2–7 overestimates the percentage decline in the long-run capital stock. Second, the simulation results give a broad range for the probable change in the long-run capital stock. In fact, a relatively small change in assumptions raises the implied decline in the long-run capital stock from 0.4 to 1.0 percent. However, the conclusions regarding changes in economic welfare and net national product are robust with respect to alternative assumptions.

An alternative upper-bound estimate of TRA's effect on investment is suggested by the observation that the equilibrium capital stock path under TRA is significantly above that which would have prevailed under the 1980 tax law, prior to ERTA. This conclusion follows from estimates indicating that, relative to the 1980 tax law, TRA results in a similar cost of capital (the cost of equity capital, however, is much lower under TRA) and a substantially lower cost of labor. The resulting higher supply of labor under TRA, relative to what would have prevailed under the 1980 tax law, will simultaneously increase the demand for investment and the supply of savings. It follows that TRA only partially scales back the investment incentives included in ERTA-TEFRA. An extreme upper-bound estimate of the fall in the equilibrium capital stock under TRA, therefore, is the net addition to the capital stock that has been induced by ERTA-TEFRA over the past 6 years.

A recent econometric study concludes that ERTA-TEFRA's business tax cuts increased gross nonresidential fixed investment by about $28 billion in the first 2 years of the current economic expansion. Extrapolating this result to each of the past 6 years, and assuming the same proportionate effect on multifamily housing investment, leads to the conclusion that ERTA-TEFRA's business tax cuts increased gross investment by about $90 billion over the past 6 years. After adjustment for depreciation, this change in gross investment implies a $64 billion increase in the capital stock. TRA, therefore, will cause the equilibrium capital stock to decline, relative to baseline, by much less than $64 billion. Assuming a short 5-year adjustment period, the implied upper-bound reduction in annual gross investment from baseline over the next 5 years is less than 2 percent. An investment decline of this magnitude amounts to only 0.3 percent of GNP.

Investment in 1987 will be influenced by two additional factors. Because the corporate tax rate is 40 percent in 1987 and 34 percent thereafter, an incentive exists to shift investment from 1988 to 1987 so that the first year's depreciation allowances are written off against the higher 1987 tax rate. On the other hand, some investment that would have been made in 1987 may have been shifted to 1986 to take advantage of more accelerated depreciation allowances.

It is important not to confuse the short-run effects of TRA with its long-run effects. In the long run, investment will be little affected by TRA and, because of an increased labor supply and more efficient investment decisions, output and economic welfare will increase.

*Transition Costs*

A major advantage of TRA is that it evens effective marginal tax rates on alternative capital investments, thereby improving the economy's long-run allocative efficiency. Unfortunately, this evening of tax rates entails short-run transition costs.

TRA will cause investment to shift away from assets that enjoyed favorable tax treatment under ERTA-TEFRA. This shifting will directly affect producers of capital inputs. Construction, in particular, will be adversely affected because the new tax rules will limit the ability of individuals to deduct net losses on investments in commercial structures and rental housing in exchange for later capital gains. These provisions of TRA have probably contributed to the recent slowdown in the construction industry. New nonresidential construction expenditures were unchanged between 1985 and 1986 after having risen at a 7-percent annual rate between 1982 and 1985. Likewise, multifamily housing starts in 1986 were down 12 percent from the pace of 1985.

TRA may also induce a minor restructuring of the market for final goods and services. The general increase in business taxes under TRA does not significantly affect the relative cost of capital for the various producers of final goods and services, but it will raise the relative cost of capital-intensive goods and services. The mix of goods and services, therefore, will shift toward more labor-intensive goods. The magnitude of this change, however, will be small. The overall cost of capital rises less than 7 percent, which sets an upper limit on the increase in the price of one industry's output relative to another.

## SUMMARY

TRA will lead to substantial long-run increases in economic welfare. Relative to net national product, the approximate changes in economic welfare that have been quantified are 0.1 percent for a more efficient allocation of investment funds and 1.2 percent for changing long-run factor supplies. Additional welfare gains, which have not been quantified, will result from greater levels of human capital investment; from less tax bias toward corporate debt; from less excessive consumption of employee fringe benefits, consumer

durables, and State and local government services; and from less tax evasion.

TRA will increase the long-run fairness of the income tax. All income classes receive a personal income tax cut and the percentage tax cut tends to be largest for low-income taxpayers. TRA also severely limits the opportunities for tax avoidance and will tend to equalize effective tax rates within income classes.

TRA will inflict some short-run costs on the economy as resources are reallocated to more highly valued uses. However, these transition costs will be minor relative to the permanent long-run gains.

## CONCLUSION

The Tax Reform Act of 1986 is perhaps the most important reform of the Federal income tax since its inception in 1913. TRA restores incentives to work, save, and invest, and will substantially boost economic growth and individual well-being.

Important progress has recently been made in restraining the growth in Federal spending. More must be done. It is imperative that the Federal budget deficit be brought under control in accord with the provisions of Gramm-Rudman-Hollings. To preserve the gains of tax reform, and to free more resources for use in the private sector, deficit reduction should be accomplished primarily through additional spending restraint. This task will be difficult but it can be achieved without sacrificing essential government services. The effort could be aided by appropriate reforms of the budgetary process.

CHAPTER 3

# Growth, Competitiveness, and the Trade Deficit

THE DETERIORATION OF THE U.S. TRADE BALANCE has been a disturbing feature of the current recovery. From a surplus equivalent to almost 1 percent of real gross national product (GNP) in 1982, U.S. real net exports of goods and services declined sharply to a deficit equivalent to more than 4 percent of real GNP in 1986, far larger than the deficit recorded in any postwar year before 1984. The growing U.S. trade deficit is often cited as a principal cause of the slowdown of real GNP growth since mid-1984 and of the problems of many trade-sensitive industries. This chapter assesses the causes and effects of the growing U.S. trade deficit and discusses policies adopted by the United States and other countries that will gradually reduce international trade imbalances in a manner consistent with sustainable growth in the world economy.

The increase in the U.S. trade deficit is a macroeconomic phenomenon. Imports have grown strongly and exports have stagnated primarily because of the strong growth of the U.S. economy (especially in terms of demand growth) relative to other countries, the difficulties faced by many developing countries in managing their external debts, and the fall in U.S. price competitiveness associated with the large appreciation of the dollar between 1980 and early 1985. Underlying these developments are several macroeconomic imbalances, including the deterioration in the U.S. saving-investment balance that has resulted from the failure of the Federal Government to bring its expenditures in line with revenues.

Initially, the deterioration of the U.S. trade balance was associated with developments that had favorable effects for the U.S. economy (reduced inflation because of dollar appreciation and reduced upward pressure on interest rates because of a capital inflow). It certainly had favorable effects for the rest of the world, which was suffering from sluggish economic growth. More recently, however, large trade and payments imbalances have been recognized to pose substantial problems for the world economy, including the stimulation of protectionist sentiments.

Important policy actions have been taken in the United States and other countries to reduce international trade and payments imbalances. Better convergence of performance and policies and efforts at policy coordination have brought about exchange-rate adjustments that improve the price competitiveness of U.S. industries. However, there is a lag in the effect of exchange-rate adjustments on trade flows.

Further efforts are needed to reduce current payments imbalances. The United States must press forward in reducing the Federal fiscal deficit through restraint on the growth of Federal spending. At the same time, other industrial countries must undertake policies that will strengthen internally generated economic growth. Developing countries need to adopt growth-oriented strategies for resolving their economic difficulties. The overall strategy is to reduce international imbalances in a manner consistent with sustainable economic growth, in the United States, in other industrial countries, and in the developing countries, rather than by moving toward protectionism that would injure all countries.

## THE MACROECONOMIC CHARACTER OF THE U.S. PAYMENTS POSITION

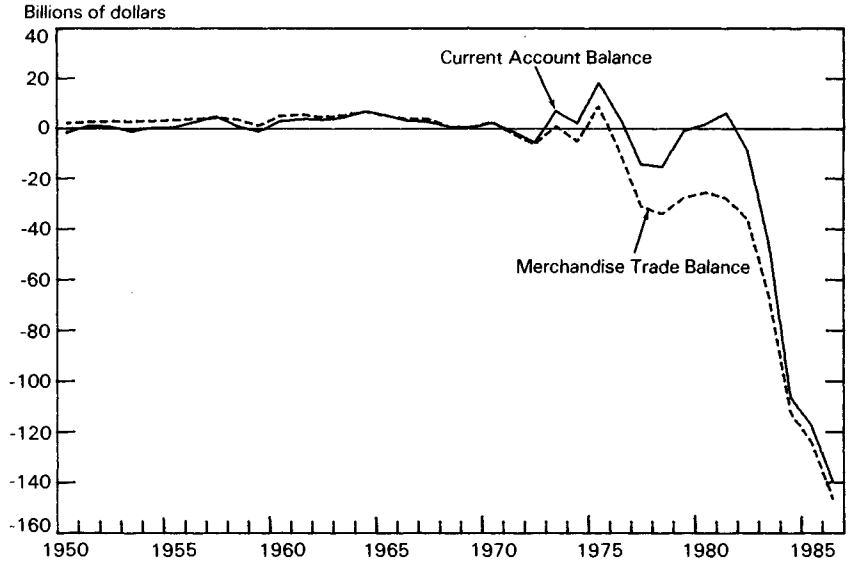
By any measure, the United States has experienced an unprecedented deterioration in its international payments position. The U.S. current account deficit—i.e., the excess of imports of goods and services over exports, plus net transfers made to foreign residents—widened from $9 billion in 1982 to an estimated $145 billion in 1986 (Chart 3-1). Almost all of this change is attributable to the increase in the merchandise trade deficit, which rose to an estimated record $150 billion in 1986.

The deterioration of the U.S. trade balance has been across-the-board. Between 1982 and 1986, the U.S. merchandise trade balance (census basis) worsened in 9 of the 10 major product groups used to classify trade, including such disparate sectors as chemicals, food and live animals, and machinery and transport equipment. Among these major product groups, the U.S. merchandise trade balance improved only in the mineral fuels and lubricants sector. This exception, however, has clearly resulted from special factors, the most important being the decline in oil imports following the 1979–80 oil shock and the recent drop in petroleum prices.

Similarly, deteriorations in U.S. bilateral trade balances have been widespread. Between 1982 and 1986, the U.S. bilateral trade position worsened against all of the top 10 U.S. trading partners (based on total trade) and 19 of the top 20. The widening of the U.S. bilateral

Chart 3-1

U.S. Trade and Current Account Balances




Note.—Data for 1986 are first 3 quarters at an annual rate; seasonally adjusted.
Source: Department of Commerce.

trade deficit with Japan from $19 billion in 1982 to more than $55 billion in 1986 has attracted the most public attention, but this deterioration is not unique. The change in the U.S. bilateral trade balance with Western Europe has been about as large, falling from a surplus of $5 billion to a deficit of more than $30 billion. Substantial deteriorations in U.S. bilateral trade positions have also been recorded with Latin America and the newly industrializing countries of East Asia, in each case exceeding $10 billion.

Special factors have undoubtedly influenced bilateral trading patterns and some markets are more open to U.S. exports than others. It is not correct, however, to place primary blame for the more than $100 billion increase in the U.S. trade deficit over the past 4 years on unfair trading practices by U.S. trading partners. The deterioration of the U.S. trade balance is too pervasive to be credibly explained by analyses focused on a product-by-product, country-by-country, basis. Rather, the great bulk of the widespread deterioration must be viewed as a product of general macroeconomic developments in the United States and the rest of the world.

This point is demonstrated by recent developments in U.S. trade in manufactures. Between 1982 and 1985, the U.S. deficit in manufactures trade widened by $101 billion. Imports of manufactures increased $112 billion. This increase in manufactures imports has been a focus for protectionist pressures in the United States, especially regarding Japan. However, as shown by Table 3–1, most of the change in U.S. bilateral balances in manufactures trade during this period reflects general movements in imports and exports, not country-specific changes in bilateral trading relations. Although the U.S. balance of manufactures trade with Western Europe deteriorated by $21 billion between 1982 and 1985, Western Europe provided virtually the same percentage of total U.S. imports of manufactures and absorbed the same percentage of total U.S. exports of manufactures in both periods. Japan supplied a somewhat higher share of U.S. imports of manufactures in 1985 than in 1982. This increase in market share, however, accounts only for about one-sixth of the $32-billion increase in Japanese exports of manufactures to the United States during this period. At the same time, the share of total U.S. exports going to Japan increased. Clearly, general movements in U.S. imports and exports, not changes in bilateral trade relations, represent the proper focus for understanding the deterioration of the U.S. international payments position.

TABLE 3–1.—*U.S. trade in manufactures, 1982 and 1985*

| Country/Area | Change in bilateral balances, 1982 to 1985 (billions of dollars) | Percent share in | | | |
|---|---|---|---|---|---|
| | | U.S. imports | | U.S. exports | |
| | | 1982 | 1985 | 1982 | 1985 |
| Canada | −4.6 | 20.1 | 18.8 | 19.8 | 26.2 |
| Japan | −29.8 | 25.1 | 26.6 | 6.6 | 7.6 |
| Western Europe | −21.1 | 26.0 | 26.1 | 26.7 | 26.7 |
| Latin America | −10.4 | 6.1 | 6.2 | 12.2 | 12.9 |
| East Asian NICs[1] | −16.4 | 14.6 | 15.0 | 7.0 | 7.2 |

[1] Newly industrializing countries: Hong Kong, Singapore, South Korea, and Taiwan.
Source: Department of Commerce, Bureau of the Census.

The general movements in U.S. imports and exports are summarized in Table 3–2. Growth of U.S. spending on imports, while strong, has not been especially rapid given the growth of the U.S. economy. Imports of goods and services (on a national income and product accounts basis) rose from 10.6 percent of nominal GNP in 1982 to 11.4 percent in 1986. Non-oil imports grew more rapidly, but this was partly offset by a decline in the oil import bill. This "normal" growth of import expenditures, however, masks a substantial increase in import volumes. Import prices have fallen sharply rel-

ative to other goods (most recently due to falling petroleum prices) and real imports rose 55 percent between 1982 and 1986. Real exports, however, grew less than 3 percent during this period even though real export prices have fallen significantly. This absence of export growth, combined with continued import spending and rapid growth of import volumes, accounts for the deterioration of the U.S. trade balance.

TABLE 3-2.—*U.S. Exports and imports of goods and services, 1980–86*

| Year | As percent of GNP | | | | Relative prices (1982=100)[1] | |
|---|---|---|---|---|---|---|
| | Current dollars | | 1982 dollars | | Exports | Imports |
| | Exports | Imports | Exports | Imports | | |
| 1980 | 12.8 | 11.7 | 12.2 | 10.4 | 105.3 | 112.0 |
| 1981 | 12.5 | 11.4 | 12.1 | 10.6 | 103.7 | 108.1 |
| 1982 | 11.4 | 10.6 | 11.4 | 10.6 | 100.0 | 100.0 |
| 1983 | [illegible]4 | 10.5 | 10.6 | 11.2 | 97.5 | 93.7 |
| 1984 | 10.2 | 11.7 | 10.6 | 13.0 | 95.9 | 90.3 |
| 1985 | 9.2 | 11.2 | 10.1 | 13.1 | 91.6 | 85.6 |
| 1986[2] | 8.9 | 11.4 | 10.1 | 14.2 | 87.7 | 80.3 |

[1] Implicit price deflator for exports or imports relative to GNP implicit price deflator.
[2] Preliminary.
Source: Department of Commerce, Bureau of Economic Analysis.

In summary, the deterioration of the U.S. trade balance over the past 4 years is a macroeconomic phenomenon. The trade balance has deteriorated against virtually all major trading partners and in virtually all major product categories. This deterioration has been associated with a stagnation in the growth of U.S. exports, strong growth of U.S. imports in volume terms, but only about normal growth of domestic spending on imports. The fundamental explanation of these developments is to be found in the relatively strong performance of the U.S. economy during the current expansion, in the factors that underlie the deterioration of the U.S. national savings-investment balance, and in the forces that generated the strong appreciation of the U.S. dollar and the associated loss of competitiveness of U.S. tradable goods industries during the early 1980s.

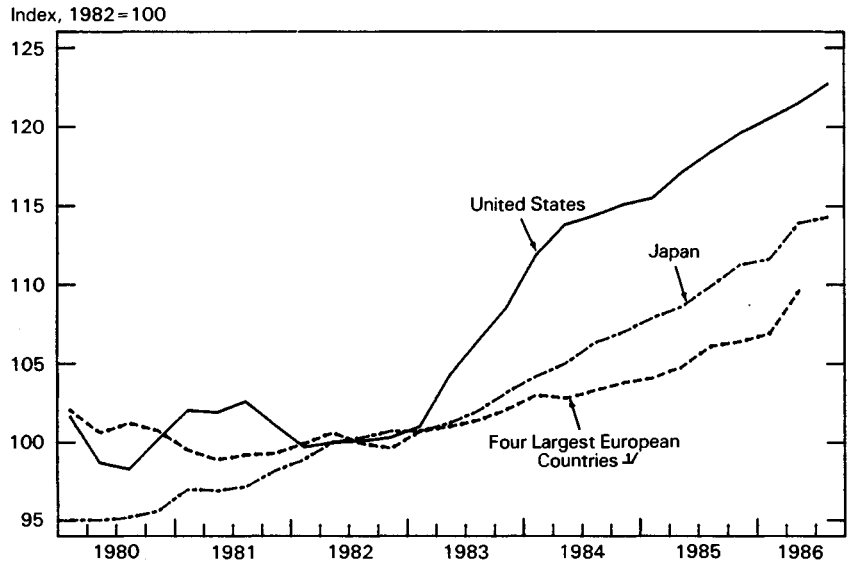
## ECONOMIC GROWTH AND THE TRADE DEFICIT

A striking feature of the current expansion—and certainly one of the key factors in assessing world economic performance—is that the United States has enjoyed a strong expansion while the recovery of economic activity in most foreign countries has been weak. This difference in growth has been especially marked in total national spending, known as domestic demand. As indicated in Chart 3-2, total domestic demand grew much more rapidly in the United States than in other countries during the first six quarters of the expansion

(through mid-1984). Since then, differentials between U.S. and foreign demand growth have narrowed considerably, but a large cumulative gap in domestic demand growth remains. This gap reflects the fact that the current recovery of U.S. domestic demand is one of the strongest of the postwar period. It also reflects the fact, however, that the recovery of domestic demand abroad has been one of the weakest.

Chart 3-2

Real Domestic Demand in Selected Industrial Countries




1/France, Italy, United Kingdom, and West Germany, weighted by GNP.

Note.—Domestic demand is the sum of personal consumption expenditures, gross private domestic investment, and government purchases of goods and services.

Sources: Department of Commerce and country sources.

These differences in output and demand growth have contributed to the deterioration of the U.S. international payments position in several ways. At an accounting level, the U.S. deficit on goods and services trade signifies that total expenditures on goods and services in the United States (domestic demand) exceed U.S. production of goods and services (GNP), and that the United States is importing the difference. Intuitively, the strong U.S. recovery—especially in terms of domestic demand—has boosted expenditures on imports as well as on domestically produced goods. Relatively weak growth abroad, however, has limited the expansion of U.S. export markets.

Weak foreign growth has been a critical problem for the world economy. Assessments of the U.S. recovery and the deterioration of the U.S. payments position must take account of this weakness and of the importance of the U.S. expansion to sustaining world growth. Similarly, domestic demand growth abroad needs to be assessed not only in terms of its effect on the U.S. trade balance, but also in its role in sustaining foreign growth as the U.S. economy adjusts. This section, therefore, reviews the recent economic performance of foreign industrial countries, developing countries, and the United States, and analyzes the deterioration of the U.S. trade balance in this regard.

### FOREIGN INDUSTRIAL COUNTRIES

In the 1980s, the industrial countries faced critical economic challenges of reducing inflation rates generally from double-digit levels, adjusting to the second oil shock of 1979–80, recovering from the world recession, and halting or reversing the growth in government expenditures. All countries achieved substantial reductions in inflation, but experienced varying success in meeting other challenges.

Western Europe's recovery from world recession has been slack. Between 1982 and 1985, real GNP in Western Europe grew at an average annual rate of about 2.2 percent, one-half of the growth rate experienced in the United States, Canada, or Japan (Table 3–3). Annual growth of domestic demand was slightly weaker, averaging only about 1.8 percent. This slow growth has coexisted with rising unemployment during much of the recovery. In 1986, the average unemployment rate for the four largest European countries (France, Italy, the United Kingdom, and West Germany) was about 10 percent, roughly double its 1980 rate.

This slow growth is especially disappointing given the stimulus to world growth provided by the strong U.S. recovery and the appreciation of the dollar (which increased these countries' relative competitiveness). Most Western European countries, however, generally coped successfully with the depreciation of the dollar in 1986. The rapid passthrough of lower petroleum prices increased consumer incomes and both consumption and investment strengthened. This strengthening of domestic demand enabled many Western European countries to enjoy a slight acceleration of GNP growth despite a weakening of real net exports. The cumulative growth rate of Western European domestic demand over the course of the expansion, however, remains low, especially for West Germany (despite strong growth in 1986), where the level of domestic demand in 1985 was only slightly above its 1980 level.

TABLE 3–3.—*Growth in real domestic demand and real GNP in major industrial countries, 1970–86*

[Average annual percent change]

| Country | 1970 to 1980 | | 1980 to 1985 | | 1982 to 1985 | | 1985 III to 1986 III | |
|---|---|---|---|---|---|---|---|---|
| | Real domestic demand[1] | Real GNP[2] | Real domestic demand[1] | Real GNP[2] | Real domestic demand[1] | Real GNP[2] | Real domestic demand[1] | Real GNP[2] |
| United States | 2.5 | 2.8 | 3.4 | 2.4 | 5.6 | 4.2 | 3.6 | 2.3 |
| Canada | 4.9 | 4.6 | 2.1 | 2.5 | 4.2 | 4.2 | 3.3 | 3.5 |
| Japan | 4.2 | 4.7 | 2.8 | 3.9 | 3.1 | 4.3 | 3.8 | 2.3 |
| France | 3.7 | 3.6 | 1.2 | 1.2 | .8 | 1.2 | (3) | (3) |
| Germany | 2.7 | 2.7 | .2 | 1.3 | 1.9 | 2.4 | 3.6 | 2.3 |
| Italy | 2.9 | 3.1 | .4 | .9 | 1.5 | 1.7 | 4.5 | 3.0 |
| United Kingdom | 1.7 | 1.9 | 1.9 | 1.9 | 3.1 | 3.1 | 3.3 | 2.0 |

[1] Domestic demand is the sum of personal consumption expenditures, gross private domestic investment, and government purchases of goods and services.
[2] Data for Canada, France, Italy, and United Kingdom are real GDP.
[3] Not available.

Sources: International Monetary Fund and country sources.

Unlike Western Europe, Japan grew at a 4.3 percent annual rate between 1982 and 1985. Much of this growth, however, was export-led. Following the 1979 oil shock, domestic demand in Japan slowed markedly as the country adjusted to the higher oil import bill. During the first half of the 1980s, the average rate of domestic demand growth was only about one-half its 1970–79 average. Rising exports, however, enabled GNP to grow more than 1 percentage point higher than domestic demand. This excess of output over demand growth was reversed in 1986 as real Japanese exports fell in the wake of the sharp appreciation of the yen. Japanese internal demand increased somewhat, but not enough to offset the decline in exports, and Japan's rate of GNP growth slowed to under 3 percent.

Despite differences in their growth rates, Western Europe and Japan shared similar policies and challenges. They both faced the sudden increase in petroleum prices while shifting to anti-inflationary monetary policies. They both moved generally toward fairly austere fiscal policies by restraining government expenditures. While the resulting reduction in inflation and increased budgetary room for tax cuts should provide a good foundation for stronger growth in the long run, the initial effect of these developments was to depress economic activity.

In Western Europe, these developments interacted with structural rigidities that, in addition to reducing long-run growth, intensified and prolonged the effect of macroeconomic shocks. Substantial nonwage labor costs and excessively expensive job security arrangements

discouraged labor mobility and new hiring. High marginal tax rates, various regulatory burdens, and large subsidies to declining industries and to agriculture impeded adjustment and growth by retarding the flow of investment toward high-growth sectors.

In Japan, structural rigidities did not prevent the economy from growing strongly over much of the 1980s. They did, however, hold domestic demand below what it could have been, giving the economy a bias toward export-led growth. Restrictions that have prevented the efficient use of scarce land, combined with mortgage instruments that require substantial downpayments, have made housing less affordable. Limitations on consumer credit markets have dampened the demand for consumer durables, discouraging investment aimed at producing for local markets.

DEVELOPING COUNTRIES

Slack growth of output and demand during the 1980s has not been confined to foreign industrial countries. With the exception of developing countries in Asia, growth in the developing world has been particularly weak. Between 1980 and 1986, annual real GNP growth in Latin America averaged 1 percent, less than one-fifth the average growth rate enjoyed during the 1970s (Table 3–4). Real GNP grew equally slowly in Africa over this period; in the Middle East, real GNP declined. This slow growth has depressed U.S. exports. Developing countries are important trading partners for the United States. In 1981, developing countries purchased 41 percent of all U.S. merchandise exports. By 1985, however, their trade share had fallen to 34 percent.

TABLE 3–4.—*Real GNP growth in developing countries*

[Average annual percent change]

| Region | 1970 to 1980 | 1980 to 1986[1] | 1980 to 1983 | 1983 to 1986[1] |
|---|---|---|---|---|
| Western Hemisphere | 5.8 | 1.0 | −1.1 | 3.2 |
| Africa | 3.7 | 1.0 | .3 | 1.7 |
| Middle East | 6.4 | −.4 | −.6 | −.1 |
| Asia | 5.2 | 4.7 | 5.2 | 4.1 |

[1] Preliminary estimates.

Source: International Monetary Fund.

The slow growth of many developing countries is the product of many forces. The recession in the industrial countries in the early 1980s, followed by the slack recovery of domestic demand in Japan and Europe, reduced the demand for many exports by developing countries. Exporters of primary commodities suffered particularly, as the shift from the inflation of the 1970s to the disinflation of the

1980s, combined with sluggish world growth, depressed prices for these products. Since 1980, the dollar price of raw agricultural commodities has fallen 20 percent; mineral prices have declined 30 percent.

With the appreciation of the dollar, the real burden of the dollar-denominated debt of many developing countries increased considerably. Much of this debt was contracted at floating rates, making debt-service payments highly sensitive to the sharp rise in nominal and real interest rates in the early 1980s. These developments caused many lenders to doubt the capacity of several developing countries to meet their obligations, and to end abruptly the access of these countries to international capital markets.

The policies of many developing countries were an important cause of the interruption of voluntary lending flows. Overvalued exchange rates, price controls, and schemes to boost real wages by legislative fiat made the production of many goods unprofitable and reduced the international competitiveness of many developing countries. Maintenance of substantially negative real interest rates, as well as tax and regulatory policies that discouraged investment, induced capital flight instead of encouraging the inward flows of capital needed to promote more rapid development. Reliance on inefficient public enterprises to produce a wide variety of goods and services continued to be important drains on government budgets. These drains further increased external deficits in these countries while failing to engender the productive investment needed to increase their capacity to service the associated external debts.

Whatever the cause, the cessation of voluntary lending flows forced developing countries with debt-management problems to cut import spending rapidly in order to reduce their borrowing needs. Between 1981 and 1983, the value of U.S. merchandise exports to Mexico fell $9 billion, a drop of almost 50 percent. Exports to the rest of Latin America fell nearly 37 percent, or about $8 billion. In contrast, U.S. exports to industrial countries fell 10 percent. Since 1983, exports to Latin America have recovered somewhat but still remain below 1980 levels.

### GROWTH AND THE TRADE DEFICIT

The strong recovery in the United States—and the resulting deterioration of the U.S. international payments position—was a powerful stimulant to growth in both industrial and developing countries. This growth, which took place against the background of world recession, provided a vibrant market for foreign exporters at a time when many developing countries, suddenly facing credit constraints, needed to expand exports to finance imports sufficient to maintain politically

acceptable levels of output and income. In contrast, sluggish growth in most other industrial countries limited increases in their imports. Between 1982 and 1984, the United States absorbed about 95 percent of the increase in merchandise exports by Latin American countries to industrial countries, much more than would be implied by the normal 50 percent U.S. share of Latin American exports to industrial countries.

At first, the deterioration of the U.S. payments position helped as well as hurt the U.S. economy. During the first six quarters of the expansion, real GNP grew at a healthy 6.8 percent annual rate; domestic demand grew even faster, averaging 8.8 percent. In effect, growing net imports allowed desired increases in spending to be satisfied without pushing production growth to levels that would have caused bottlenecks. Although the strong appreciation of the dollar reduced U.S. international competitiveness, the resulting decline in import prices boosted real incomes in the United States and helped to ameliorate inflationary pressures.

Since mid-1984, domestic demand has grown at a 3.1 percent annual rate. However, despite this slowing of demand growth to more sustainable levels, increases in imports continued to outpace exports, and the annual rate of real GNP growth from the second quarter of 1984 to the fourth quarter of 1986 averaged only 2.4 percent. Insofar as the expanding capacity of the U.S. economy was more than sufficient to meet increases in total U.S. demand, the expansion of the U.S. trade deficit during this period was an important factor limiting growth. This negative consequence has stimulated protectionist sentiment in the United States, especially because the burden of the resulting adjustment has not been spread evenly through the economy. Industries that account for about 70 percent of U.S. GNP produce either services that do not enter into international trade or products that are largely nontradable. The deterioration in the U.S. balance in goods and services trade between 1980 and 1986, amounting to 5.7 percent of real GNP, was therefore concentrated in sectors of the economy that account for only about 30 percent of GNP. Moreover, the distribution of the adjustment within these sectors was not even.

## THE SAVING-INVESTMENT BALANCE

The deterioration of the U.S. international payments position has also been closely associated with movements in national saving and investment. As discussed in the previous section, the U.S. deficit in goods and services trade signifies that total spending in the United

States on goods and services exceeds U.S. production of goods and services. This necessarily implies that the United States is absorbing foreign saving to finance the difference between expenditures and income or, equivalently, that U.S. investment exceeds U.S. saving. For example, in 1986, gross national saving in the United States was $537 billion; gross private investment was $686 billion. The difference was financed by a net capital inflow of nearly $150 billion from abroad.

THE PRIVATE SAVING-INVESTMENT BALANCE

The national saving-investment balance is the excess of the private saving investment balance—the difference between gross private saving and gross private domestic investment—over the general (Federal, State, and local) government deficit. Between 1982 and 1986, the private saving-investment balance fell from 3.5 percent of GNP to −0.1 percent. This decline reflected the strength of consumption and investment growth, as is normal for a recovery. Given the length of the current expansion, the current level of the private saving-investment balance is not unusually low. The private saving-investment balance was lower in 1969 and 1979 than it was in 1986.

Between 1982 and 1985, the gross private saving rate—defined as gross private saving divided by GNP—fell less than one-half percentage point (Table 3–5). The ratio of private saving to GNP fell significantly, but this decline was more than offset by increases in net business saving. Such offsetting movements in household and business saving are not surprising, since households are the ultimate owners of all wealth, including the capital owned by businesses.

TABLE 3–5.—*Private saving and investment*

| Year | As percent of GNP | | | | | Relative price of investment (1982=100)[3] |
|---|---|---|---|---|---|---|
| | Private saving | | | Gross private domestic investment | | |
| | Gross[1] | Personal | Business (net)[2] | 1982 dollars | Current dollars | |
| 1979 | 17.8 | 4.7 | 2.5 | 18.0 | 18.1 | 100.6 |
| 1980 | 17.5 | 5.0 | 1.4 | 16.0 | 16.0 | 100.1 |
| 1981 | 18.0 | 5.2 | 1.4 | 16.8 | 16.9 | 100.6 |
| 1982 | 17.6 | 4.9 | .6 | 14.1 | 14.1 | 100.0 |
| 1983 | 17.4 | 3.8 | 1.9 | 15.4 | 14.7 | 96.0 |
| 1984 | 17.9 | 4.5 | 2.4 | 18.7 | 17.6 | 94.1 |
| 1985 | 17.2 | 3.6 | 2.7 | 18.1 | 16.5 | 91.8 |
| 1986[4] | 16.2 | 2.8 | 2.8 | 17.9 | 16.3 | 90.9 |

[1] Gross private saving is personal saving plus net business saving and capital consumption.
[2] Net business saving is undistributed corporate profits plus inventory valuation and capital consumption adjustments.
[3] Implicit price deflator for gross private domestic investment relative to GNP implicit price deflator.
[4] Preliminary.

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

The gross private saving rate fell sharply in 1986. However, even with the drop in private saving, most of the decline in the private

saving-investment balance during the current expansion is accounted for by strong investment growth. Real gross private domestic investment rose 46 percent between 1982 and 1984, boosting the share of real investment in real GNP from a near record low of 14.1 percent to a near record high of 18.7 percent. Although investment growth has been sluggish since 1984, the share of real investment in real GNP has remained near cyclical highs.

This strength in real investment spending, however, was partially offset by a substantial decline in the relative price of investment goods. As reported in Table 3–5, the relative price of investment goods fell 9.1 percent between 1982 and 1986. In 1986, nominal expenditures on gross private domestic investment accounted for 16.3 percent of GNP, well below 1978–79 levels and only 0.3 percentage point above the average share of nominal investment expenditures experienced over the past 25 years. Thus, the lower relative price of investment goods allowed large increases in real investment to occur with only moderate demands on nominal saving. This development produced a normal cyclical decline in the private saving-investment balance, despite the decline in the gross private saving rate and the strength of real investment.

### THE GOVERNMENT DEFICIT

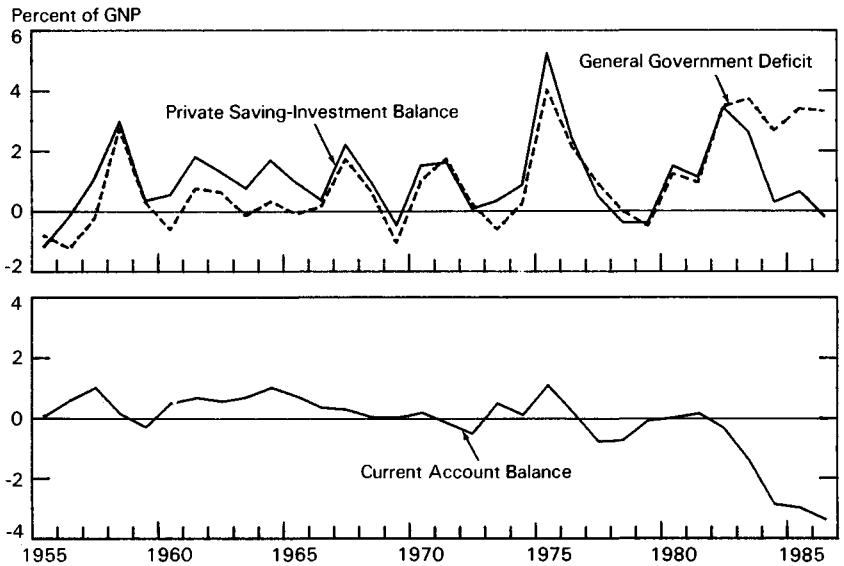
The large increase in the general government budget deficit, however, stands in marked contrast to its normal cyclical behavior. The general (Federal, State, and local) government budget deficit averaged 3.4 percent of GNP in 1986. This deficit/GNP ratio, although large, is not the largest experienced during the past 15 years. The general government budget deficit exceeded 3.4 percent of GNP in both 1975 and 1982. The 1975 and 1982 deficits, however, occurred during sharp recessions; the current large deficit comes in the fourth year of an expansion.

As indicated in Chart 3–3, until recently the general government budget deficit has tended to track the private saving-investment balance during cyclical expansions and declines. National saving has approximated national investment and the current account balance has been small. In recessions, government budget deficits typically widen as a result of declining tax revenues and increased expenditures associated with income support. The private saving-investment balance, however, usually increases by more than the cyclically induced decline in the general government budget deficit (because of weak investment and consumption spending), and the current account balance tends to improve. In the sharp 1975 recession, for example, the largest general government budget deficit in the postwar era (meas-

ured as a percent of GNP) coincided with one of the largest U.S. current account surpluses.

Chart 3-3

Private Saving-Investment Balance, Government Deficit, and Current Account Balance




Note.—For current account balance, data for 1986 are first 3 quarters at an annual rate; seasonally adjusted.
Source: Department of Commerce.

Similarly, strong investment growth during an expansion usually outstrips increases in private saving, and the private saving-investment balance declines. The associated growth in tax revenues, however, traditionally lowers the general government budget deficit, and the deterioration in the U.S. current account deficit usually remains modest. This pattern has not been followed in the current expansion. The increased surpluses of State and local governments have been more than offset by the large growth of the Federal Government budget deficit. This unprecedented deterioration of the U.S. fiscal position during an expansion, combined with a normal cyclical decline in the private saving-investment balance, has been reflected in an unprecedented deterioration in the U.S. current account balance.

It is important to emphasize that the government budget deficit and the U.S. international payments position are the product of many forces and that the link between them is complex. As noted above, increases in the government budget deficit that result from a cyclical

decline are typically associated with improvements in the U.S. international payments position. Clearly it is incorrect to say that movements in budget deficits always cause equal movements in the U.S. current account balance. It is equally clear, however, that the persistence of the Federal deficit late into the current expansion is one of the most important factors contributing to the growth of the trade deficit.

It is also important to emphasize that the desirability of any fiscal measure taken to reduce the current large budget and trade deficits depends critically on whether the measure is desirable in its own right. Federal outlays have remained at a high percentage of GNP. Sustained efforts to control Federal spending are needed not only to preserve the benefits of tax reform but also to reduce the U.S. international payments imbalance. The key point is that a substantial reduction in the U.S. current account deficit will require restraint of U.S. domestic demand growth relative to GNP growth. If this restraint does not come from controlling government spending, it must come from the other components of domestic demand—consumption and investment. Tax increases are not the answer. Higher tax rates would not only lower GNP growth in the short run, but would also continue to dull economic incentives and to reduce growth far into the future. This would make even more painful the necessary adjustment of consumption and investment to bring domestic demand in line with GNP in the long run.

## INTERNATIONAL CAPITAL FLOWS

The link between the current account balance and the national saving-investment balance also helps to emphasize the importance of international capital markets and net capital flows in the development of the U.S. current account deficit. The counterpart to the U.S. current account deficit is a capital account surplus; developments influencing one account significantly influence the other. On the one hand, deep, liquid international capital markets have represented a ready source of financing for the large shortfall of U.S. saving relative to U.S. investment. On the other hand, changes in the desirability of holding U.S. assets, particularly dollar-denominated assets, have had substantial effects on exchange rates, thereby affecting the current account.

International capital markets channel resources from the ultimate savers in the world economy to those countries that offer the most attractive opportunities to invest. For example, through most of the 19th century, the inflow of capital from abroad helped the United States to exploit its vast productive potential much more quickly than if U.S. capital formation had been limited to U.S.-based saving. In

this case, the associated current account deficit was part of a process that invigorated a then-young economy.

Similarly, the capital inflows now associated with the U.S. current account deficit have once again become an important source of investment financing. Several factors have made the United States one of the most attractive places in which to invest funds. The strong growth of the U.S. economy during the first six quarters of this expansion stood in marked contrast to the sluggish performance abroad, especially in Europe. This growth, combined with the reduction in capital taxation embodied in the Economic Recovery Tax Act of 1981 (ERTA), surely increased the relative attractiveness of investment in the United States.

It is important to recognize, however, that the development of the U.S. current account deficit has also been associated with a sharp drop in the national saving rate (relative to the cyclical peak in either 1979 or 1981). Between 1981 and 1986, the national saving rate fell more than 4 percentage points (Table 3–6). This drop has made the United States increasingly dependent on net capital inflows to finance U.S. investment. In 1986, net capital inflows—and the associated buildup of foreign claims on the United States—equaled one-half of U.S. net capital formation. To the extent that the drop in the national saving rate is not desirable, this dependence on net capital inflows to finance U.S. investment is also not desirable. Part of the decline in the national saving rate has resulted from the failure to bring government expenditures in line with revenues. Part of the increased dependence on capital inflows to finance U.S. investment, therefore, ought to be viewed as a by-product of a fiscal stance that should be corrected by gradually reducing the share of Federal expenditures in GNP.

TABLE 3–6.—*National saving, investment, and net capital inflow*

[Percent of GNP]

| Year | Gross private saving | Government saving[1] | Gross national saving | Net capital inflow[2] | Gross private domestic investment[3] |
|---|---|---|---|---|---|
| 1979 | 17.8 | 0.5 | 18.3 | −0.1 | 18.1 |
| 1980 | 17.5 | −1.3 | 16.3 | −.3 | 16.0 |
| 1981 | 18.0 | −1.0 | 17.1 | −.2 | 16.9 |
| 1982 | 17.6 | −3.5 | 14.1 | −.0 | 14.1 |
| 1983 | 17.4 | −3.8 | 13.6 | 1.1 | 14.7 |
| 1984 | 17.9 | −2.7 | 15.2 | 2.4 | 17.6 |
| 1985 | 17.2 | −3.4 | 13.8 | 2.7 | 16.5 |
| 1986[4] | 16.2 | −3.4 | 12.8 | 3.5 | 16.3 |

[1] Federal, State, and local governments.
[2] Includes statistical discrepancy.
[3] Nominal prices.
[4] Preliminary.
Source: Department of Commerce, Bureau of Economic Analysis.

This conclusion, however, in no way minimizes the role capital markets have played in driving the current account. Exchange rates are determined in asset markets. As is discussed in the next section, the strong increase in the demand for dollar-denominated assets during the first half of the 1980s, and the consequent appreciation of the dollar between 1980 and early 1985, was a key factor underlying the deterioration of the U.S. current account balance.

## EXCHANGE RATES AND COMPETITIVENESS

Exchange-rate changes are a direct channel through which international divergences in economic policy are transmitted to domestic economic performance. Exchange-rate movements that persistently exceed international inflation differentials—real exchange-rate movements—change the prices of a country's imports relative to domestically produced goods and alter the ability of its producers to compete in world markets. This section reviews the behavior of the real foreign exchange value of the dollar and the relative price of U.S. imports over the past decade, investigates the sources of these real exchange-rate movements, and assesses the effect of these exchange-rate movements on the international cost competitiveness of U.S. manufacturers.

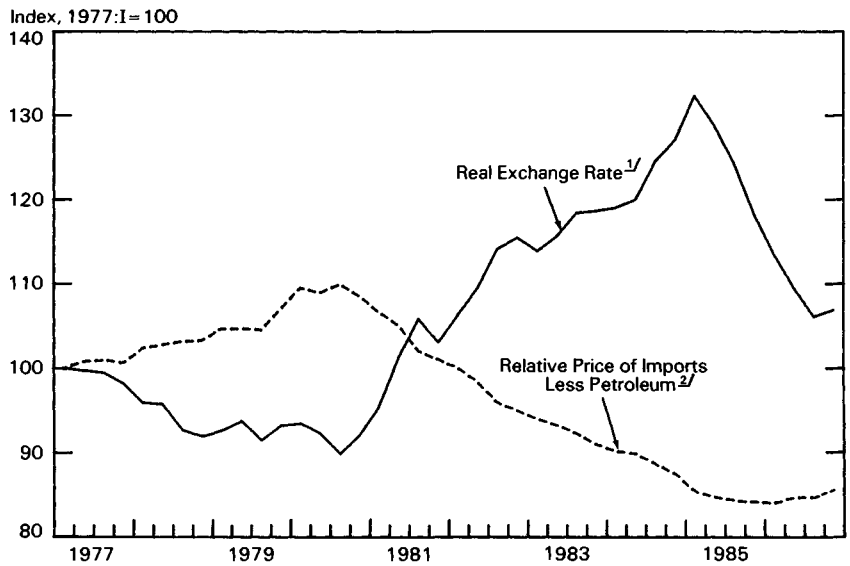
### SOURCES OF REAL EXCHANGE RATE MOVEMENTS

The past decade has been characterized by wide swings in the foreign exchange value of the dollar and in the relative price of imports. Chart 3–4 presents an index of the foreign exchange value of the dollar against a trade-weighted basket of currencies from 18 other industrial and 22 developing countries. The index is adjusted for differences in wholesale price inflation in each country and thus measures changes in the real foreign exchange value of the dollar. Also presented is an index of the relative price of non-oil imports, computed as the ratio of the import price deflator excluding petroleum to the total GNP price deflator. As can be seen from the chart, broad movements in the dollar's real exchange rate and the relative price of imports over the past decade can be divided into three phases.

During the late 1970s, the real value of the trade-weighted dollar depreciated and the relative price of imports increased by roughly 10 percent. According to many observers, the weakness of the dollar in the late 1970s was directly related to the perception that the United States was embarked on significantly more inflationary policies than were Japan and many West European countries. This perception led to depreciation of the dollar not only in nominal terms, but also in real terms. The nominal foreign exchange value of the dollar fell

Chart 3-4

Real Exchange Rate and Relative Price of Imports




1/ Trade-weighted value of the dollar adjusted by relative wholesale prices.

2/ Ratio of implicit price deflator for imports less petroleum to GNP implicit price deflator.

Sources: Morgan Guaranty Trust Company of New York and Department of Commerce.

more than was justified by the actual excess of inflation in the United States over inflation in other countries, because the exchange rate responds to expected future inflation as well as to current and past inflation.

The relatively weak dollar during the late 1970s benefited many trade-sensitive industries in the United States. The real depreciation of the dollar shielded these industries from their foreign competitors because, as is shown in Chart 3–4, import prices increased faster than did the prices of domestically produced goods and services. This allowed some manufacturing industries to remain profitable while increasing real wage rates substantially more rapidly than in the rest of the United States economy, despite slow productivity growth. The insulation from foreign competition that the weak dollar provided to many trade-sensitive industries in the United States in the 1970s left many of these industries poorly prepared to deal with such competition in the 1980s.

The first half of the 1980s was marked by an unprecedented surge in the real foreign exchange value of the dollar. From the third quarter of 1980 through the first quarter of 1985, the real value of the trade-weighted dollar appreciated by some 47 percent and the relative price of imports declined by 22 percent. Although some observers have claimed that the dollar's appreciation can be attributed to a single cause, several factors contributed to the sustained rise in the dollar between 1980 and early 1985.

The shift in monetary policy from one of perceived ease and accommodation to an actual and ultimately perceived anti-inflationary stance in the early 1980s was likely critical to the reversal during 1981 and 1982 of the real depreciation of the dollar that had occurred in the late 1970s. Between the third quarter of 1980 and the fourth quarter of 1981, the dollar appreciated in real terms back to its early 1977 level. The dollar appreciated an additional 12 percent in real terms in 1982. This appreciation was likely due, at least in part, to increasingly persuasive evidence that the Federal Reserve was committed to an anti-inflationary monetary policy.

From the trough of the recession in the fourth quarter of 1982 through the first quarter of 1985, the dollar appreciated an additional 15 percent in real terms. The initial dramatic decline and subsequent stability of inflation, in conjunction with the strong growth in real GNP in comparison with both past expansions and growth in most other industrial countries, probably played an important role in the further appreciation of the dollar during 1983-84.

The excess of real domestic demand over real domestic output that has characterized the current expansion translates into an excess of real domestic investment over real domestic saving that, in turn, equals the real net inflow of foreign capital. At least a portion of this capital inflow and the appreciation of the dollar during 1983-84 likely resulted from the increase in the after-tax profitability of physical investment in the United States during this period. The increase in the after-tax profitability of investment resulted from the interaction of the ERTA tax reductions with the decline in inflation, which increased the value of original cost depreciation.

Real business fixed investment grew much more rapidly relative to real GNP in the first 2 years of the expansion than in previous cyclical upswings. Indeed, the share of real business fixed investment in real GNP achieved a postwar record in 1984. This strength occurred despite high real interest rates and concern that the Federal budget deficit would crowd out private investment. Furthermore, the real valuation of the corporate capital stock by the equity markets also surged during this period. As discussed in previous *Economic Reports*, these facts are consistent with the view that changes in the tax law

raised the value in equity markets of new physical capital and the attractiveness of foreign investment in the United States.

Since the first quarter of 1985, the real value of the trade-weighted dollar has fallen by 20 percent, back to its late 1981 level. Although the causes of this steep depreciation of the dollar are difficult to isolate with precision, the decline in real GNP growth in the United States since mid-1984 likely contributed to the dollar's fall. In addition, the announced intentions of the Group of Five to seek a lower dollar in the Plaza Agreement and subsequent actions to back up these intentions, especially the continuation of the easing of U.S. monetary policy that began in late 1984, probably contributed to further dollar depreciation after September 1985. More generally, the convergence of economic performance and economic policies of the leading industrial countries in 1985 and 1986 was probably necessary to support a significant adjustment of exchange rates.

So far, little evidence exists of the effect of the substantial depreciation of the dollar on U.S. trade flows. Several factors help to explain this limited impact. Existing empirical evidence indicates that import prices respond with a lag of up to 2 years to even large changes in exchange rates. This phenomenon results from the choice of foreign producers to boost profit margins as their currencies depreciate against the dollar and to allow these margins to narrow so as to maintain market share as their currencies appreciate against the dollar. According to one study, foreign producers widened their profit margins considerably during the 1980-84 appreciation of the dollar. This provided them ample room to narrow profit margins by limiting price increases and thus maintain market share as the dollar depreciated. Indeed, as is shown in Chart 3-4, non-oil import prices actually declined in 1985 and began to rise only in 1986.

Another factor that has limited the immediate effect of the depreciation of the dollar on U.S. trade flows is that the dollar has not in fact depreciated substantially against the currencies of several important trading partners. Total imports from Canada, Korea, and Taiwan exceed imports from Western Europe or Japan, yet the dollar has depreciated less than 7 percent against the currencies of Canada and Taiwan and has actually continued to appreciate against the Korean won.

### PRODUCTIVITY AND COMPETITIVENESS

Declining international competitiveness of the U.S. economy, especially manufacturing industries, is often cited as an important cause of the deterioration of the U.S. trade balance. Programs to revive supposedly sagging productivity growth are often recommended as a means of improving competitiveness and reducing the trade deficit.

In fact, as is discussed in Chapter 1, productivity growth in manufacturing during the current cycle has exceeded the postwar average and substantially exceeded the sluggish rate of productivity growth during the 1970s. Since the business cycle peak in the third quarter of 1981, output per hour in manufacturing has grown at an average annual rate of 3.8 percent, 46 percent faster than the postwar average of 2.6 percent per year and more than twice the annual average rate of 1.5 percent recorded between 1973 and 1981. Furthermore, real wage growth in the manufacturing sector has exhibited notable restraint during the current cycle. Since the business cycle peak, real hourly compensation in manufacturing has grown at an average annual rate of 1.0 percent, 50 percent slower than the postwar average annual rate of 2.0 percent.

As the result of restrained wage increases and strong productivity growth, unit labor costs in manufacturing have increased at an average annual rate of only 0.7 percent since the 1981 peak and have actually declined at an average annual rate of 0.8 percent since the recession trough in the fourth quarter of 1982. By contrast, unit labor costs in manufacturing have grown at an average annual rate of 3.4 percent over the entire postwar period and grew at an average annual rate of 8.2 percent between 1973 and 1981.

Table 3–7 compares movements in unit labor costs in the United States with a trade-weighted average of unit labor costs in 11 of the largest foreign industrial countries. As is shown in the second column of the table, when measured on a national currency basis, growth in unit labor costs during the first half of the 1980s was 5 percentage points higher abroad than in the United States. In the absence of other developments, the relatively better U.S. performance—which was a product of surging productivity growth and restrained wage increases—would have improved U.S. international cost competitiveness. However, the cost competitiveness of U.S. manufacturers also depends upon the dollar exchange rate. Foreign importers can charge a lower dollar price to cover the same level of national currency costs when the dollar appreciates against their own currencies.

As indicated by the third column of Table 3–7, the appreciation of the dollar during the first half of this decade overwhelmed the other determinants of international cost competitiveness. In national currency terms, unit labor costs in the 11 largest foreign industrial countries rose more than 16 percent during the first half of the 1980s; in dollar terms, foreign unit labor costs fell nearly 20 percent. Instead of experiencing a 5 percent improvement in U.S. international cost competitiveness between 1980 and 1985, the strong appreciation of

TABLE 3–7.—*U.S. and foreign unit labor costs, 1980–85*

[1980=100]

| Year | United States | Eleven foreign industrial countries[1] | |
|---|---|---|---|
| | | National currency basis | Dollar basis |
| 1980 | 100.0 | 100.0 | 100.0 |
| 1981 | 107.3 | 108.2 | 96.9 |
| 1982 | 114.0 | 114.4 | 91.6 |
| 1983 | 111.1 | 115.4 | 88.5 |
| 1984 | 110.5 | 115.1 | 81.9 |
| 1985 | 111.2 | 116.3 | 80.3 |

[1] Trade-weighted average of Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, and United Kingdom.

Source: Department of Labor (Bureau of Labor Statistics) and Council of Economic Advisers.

the dollar boosted the ratio of U.S. unit labor costs to foreign unit labor costs by 39 percent.

This gap between the unit labor costs in U.S. manufacturing industries relative to manufacturing industries in most other industrial countries has been narrowed significantly by the depreciation of the dollar that began in early 1985. According to the International Monetary Fund, the ratio of unit labor costs in the United States to a trade-weighted average of unit labor costs expressed in dollars in other industrial countries fell almost 30 percent to its 1981 level between the first quarter of 1985 and the second quarter of 1986.

In sum, the deterioration of international cost competitiveness in U.S. manufacturing during the first half of this decade was the result of the real appreciation of the dollar, not sagging productivity growth or excessive wage increases. This fact does not imply, however, that the United States can or should rely solely on exchange-rate movements to improve further its international cost competitiveness. Exchange-rate depreciation can increase competitiveness in the intermediate run by making foreign-produced products more expensive, but at the cost of slower real income growth. By contrast, improving international cost competitiveness through greater productivity and economic efficiency increases real income growth. The United States should seek to strengthen international competitiveness by implementing policies that increase productivity. The President is sending to the Congress a package of initiatives to enhance further U.S. productivity and competitiveness, including increased funding for basic and applied scientific research, reforms of Federal regulations to reduce business costs while continuing to serve important regulatory goals, and efforts to improve access for U.S. products and services in foreign markets.

## POLICY COORDINATION AND EXCHANGE RATE STABILITY

There is general agreement among economists that better convergence of economic performance and better coordination of economic policies among the leading industrial countries is both desirable and essential for achieving greater stability of exchange rates. At the Tokyo Economic Summit, the leaders of the seven largest industrial countries agreed to a flexible approach to improving the international monetary system by providing more effective procedures for the coordination of economic policies. The approach adopted in Tokyo represents an important step down the path to greater convergence of economic performance and better coordination of economic policies—a path that was charted at earlier Economic Summits and Ministerial Meetings, including especially the Versailles Economic Summit and the Group of Five meeting of September 1985. Three features of the approach outlined at the Tokyo Summit deserve particular emphasis.

First, efforts at policy coordination will not focus narrowly on achieving specific values or ranges for exchange rates. Policymakers are to consider a broad class of indicators of economic performance and economic policy: GNP growth rates, inflation rates, interest rates, unemployment rates, fiscal deficit ratios, current account and trade balances, monetary growth rates, reserves, and exchange rates. This approach should help to avoid the inherent weakness of pegged exchange-rate systems: rigid commitments to particular exchange-rate values or ranges become too expensive in terms of other important policy objectives and ultimately collapse under the pressure of policy conflicts. The Tokyo Summit leaders explicitly stated that the objectives of policy coordination are much broader than limiting exchange-rate movements. Objectives include "promoting non-inflationary economic growth, strengthening market-oriented incentives for employment and productive investment, opening the international trading and investment system and fostering greater stability of exchange rates."

Second, individual nations are responsible for formulating their economic objectives and forecasting the critical indicators of economic policy and performance. Collective assessment of the mutual compatibility of objectives and forecasts is required as the essence of policy coordination, and the managing director of the International Monetary Fund is assigned his traditional role in assisting multilateral surveillance. However, no agency is asked to undertake the essentially impossible task of forcing sovereign nations to pursue policies contrary to their perceived national interests. Instead, the onus is on individual nations to live up to their own commitments and forecasts.

Third, when significant deviations from the intended and agreed upon course arise, individual nations are pledged "to make their best efforts to reach understanding on appropriate remedial measures. . . ." This pledge is not an effort to fine-tune the world economy to correct for all of the minor and inevitable deviations from its forecasted path. The emphasis is on "significant deviations from intended course." Further, the Summit leaders agreed that remedial efforts should "focus first on underlying policy fundamentals. . . ." This agreement does not preclude official intervention in foreign exchange markets, when such intervention would be useful. However, it does place the emphasis for policy coordination where it belongs—on the economic policies that ultimately influence important developments in the world economy.

Experience with the operation of this new system of policy coordination will contribute to its further development. Even at this stage, however, it is clear that better policy coordination offers the promise of more stable exchange rates, reduced external imbalances, and a more favorable economic environment for developing countries.

### CURRENT REQUIREMENTS FOR POLICY COORDINATION

In the period ahead, the principal challenge of policy coordination is to reduce present international payments imbalances in a manner that will support sustained, noninflationary growth in the world economy. Unilateral actions by the United States are not sufficient to accomplish this goal. Although a sharp U.S. recession would probably improve the U.S. trade balance, it would not only injure economic well-being in the United States, but would also sharply curtail prospects for growth in the rest of the world. Massive dollar depreciation, by shifting world demand toward U.S.-produced goods, would help reduce the U.S. external deficit but at a cost of increased inflationary pressures in the United States and depressed output growth in the main U.S. trading partners. Put simply, reduction of the U.S. current account deficit requires that real GNP in the United States grow more strongly than domestic demand. This implies that real GNP growth abroad will fall short of foreign domestic demand growth. Unless foreign domestic demand strengthens, improvement in the U.S. current account balance will necessarily be associated with reduced foreign growth. Given the size of the potential adjustment in the U.S. current account, the risk is that foreign growth would be sharply reduced.

An essential element of any program to reduce current external imbalances, therefore, is that other industrial countries must achieve stronger, domestic-led growth. Stronger domestic demand growth is needed primarily to maintain satisfactory output and employment

growth in these countries while the United States adjusts. It is also needed to engender the much needed expansion of U.S. export markets without having to rely on further massive depreciation of the dollar. Finally, strengthened foreign domestic demand is needed to maintain the growth of demand for the exports of many developing countries. Many of these countries, especially those with debt service problems, face considerable pressures to improve their external positions. The United States, however, will be reducing, not increasing, its external deficit; thus, further improvements of the developing countries' payments positions must come from the other industrialized countries.

Because the reduction of the U.S. current account deficit will take time, strengthened foreign growth must be sustained over the medium term. Achieving such long-lasting improvements requires the elimination of those structural (i.e., microeconomic-based) distortions that have impeded growth. In particular, to ease adjustment in the traded goods sectors, efforts must be redoubled to eliminate not only those practices that have restrained domestic demand but also those rigidities that have reduced the mobility of labor and capital between sectors. In Western Europe, where the recent economic recovery has coexisted with sustained rises in unemployment—in some countries to depression levels—there is a clear need to reform those policies that have reduced labor flexibility and have rendered employment unprofitable. In Japan, where the emphasis has been on export-led growth, the need is to eliminate those policies that have hindered domestic demand. In many countries there is a need to consider tax reforms that would substantially lower marginal tax rates, without necessarily reducing government revenues in the long run. These measures are desirable not simply because they would indirectly help reduce present external imbalances; they are desirable because they would improve long-term economic performance and well-being.

Efforts by foreign industrial countries to effect a growth-oriented reduction in external imbalances must be matched by corresponding efforts by the United States. Reductions in the U.S. current account deficit require that domestic demand in the United States grow less rapidly than GNP and that national saving increase by more than national investment. The United States can make a critical contribution to achieving these results by reducing the Federal deficit through expenditure restraint. Restraint on Federal spending would help slow domestic demand growth, but the effects of this slowing would not significantly reduce GNP growth, provided that stronger growth of demand abroad and the lagged effects of dollar depreciation boost U.S. exports.

The preferred approach to unwinding current external imbalances calls for continued growth of world demand, but with a smaller contribution coming from the United States and a larger contribution from surplus countries. Domestic demand growth abroad would expand faster than potential GNP, while domestic demand in the United States would grow more slowly than potential output. Movements in exchange rates would offset the effect of these changes in the sources of world demand for any one country's products. In the United States, the reduced size of the government would allow for a greater percentage of the Nation's output to be devoted toward private investment and consumption.

Two other elements are also essential for the effective implementation of this program. First, developing countries, especially those with external debt problems, need to adopt more growth-oriented policies. The critical issue here is really for developing countries themselves to make the reforms necessary to support long-term growth. However, the industrial countries and the international financial system have an important role to play in assisting countries that are moving toward more growth-oriented reforms. This role is the essence of the program articulated by the Secretary of the Treasury in October 1985 to deal with the problems of debtor countries. The long-term goal of this approach is to restore the access of these countries to international capital markets by increasing their capacity to service their debts. By taking the measures needed to restore their access to international credit markets, these countries will not only be pursuing policies that will promote long-term growth with existing resources, but will also restore the capital inflows needed to underwrite additional investment and growth. These developments would primarily benefit the developing countries themselves. They would also expand markets for the products of the industrial countries. Meanwhile, industrial countries can contribute to growth-oriented adjustment in developing countries by sustaining a growing market for their exports. (For a detailed analysis of this subject, see *Economic Report of the President*: 1986, Chapter 2.)

Finally, all countries must avoid new protectionist measures and work to reduce and eventually dismantle existing barriers to international trade in both goods and services. Much attention has recently focused on growing protectionist sentiment in the United States. Progress in reducing the U.S. trade deficit, combined with efforts abroad to reduce protectionism in foreign markets, are clearly important in resisting protectionist actions in the United States.

Similarly, efforts in the United States to resist protectionism are needed to prevent the awakening of protectionist forces abroad. International trade, after all, is dominated by trade in goods. Just as

most of the deterioration of the U.S. trade balance was in manufactures, improvements in the U.S. trade balance will come about largely from a swing in manufactures trade. This development will present serious adjustment problems for U.S. trading partners, especially as the performance of manufactures output in many countries, notably Western European countries, has been weak. It would be singularly unfortunate, therefore, if the United States were to suggest—just as its trade position was beginning to improve—that protectionist measures were an acceptable response to these adjustment pressures. In the end, all countries share an important common interest in the liberal system of international trade and must work to protect and expand that system.

International policy coordination will always be made difficult by intercountry differences in economic situation and policy priorities. At a minimum, however, it is important to identify those situations in which joint actions will reinforce efforts to achieve individual as well as common goals. Clearly, it is in every nation's interest that international payments imbalances unwind in an environment of continued world growth. Actions by other nations to strengthen their domestic demand and to reduce structural rigidities that have impeded adjustment, combined with resolute action by the United States to restrain Federal spending, offer a means of accomplishing this goal.

CHAPTER 4

# Opening International Markets

ONE OF THE MORE REMARKABLE FEATURES of the past 40 years has been the rapid increase in real income per capita in many parts of the world. This economic expansion has been fueled in large part by a tremendous growth in world trade. In turn, growth in world trade has resulted from a major effort led by the United States and other countries to reduce global barriers to international commerce.

These events stand in direct contrast with the decade preceding the start of World War II. Then, stagnation in the domestic economies of major nations was compounded by the spread of import barriers, export subsidies, trade wars, and a general emphasis on closing domestic markets to foreign competition.

Determined not to see this scenario unfold again after the war, the United States sparked a move to establish a world trade system complete with firm rules to govern trade practices and to ensure that trade policies would not degenerate into beggar-thy-neighbor protectionism. International organizations were created to guide the world economy along this new path. Among them was the General Agreement on Tariffs and Trade (GATT), set up to initiate a reduction of trade barriers and to mediate commercial disputes between member nations.

GATT has presided over seven multilateral rounds of negotiations that have produced historic global tariff reductions. As tariffs have come down, the volume of international trade has increased much faster than world production. Unfortunately, while GATT has been expanding trading opportunities among countries, largely through tariff reductions, these efforts have been undermined by new and much less transparent protectionist measures.

The world thus stands at a crossroads similar to the one it faced 40 years ago. The commercial playing field is littered with government policies aimed at protecting various industries from the rigors of international competition. Trade in major product sectors—including steel, automobiles, electronics, textiles, apparel, and footwear—is becoming increasingly regulated by measures such as voluntary export restraints and orderly marketing agreements. The cost of these policies is enormous while the benefits reach only a few. Unless some-

thing reverses the trend toward government-sponsored trading arrangements, the growth enjoyed by world economies over the past four decades could be severely curtailed.

The United States, as the largest participant in world trade and as a long-time champion of free trade, stands in a unique position to fight this move toward greater protectionism. From its start, the Administration has supported free trade. Most recently, it reaffirmed this position in a policy statement issued on September 23, 1985, which contained a multipronged program to enhance and strengthen the international trading environment. Elements of the program included macroeconomic policies aimed at dollar realignment, fiscal deficit reduction, and an effort to ease the debt burden of developing countries.

With respect to trade policy, the statement proposed that the United States undertake a number of bilateral measures aimed at reducing foreign trade barriers. A second thrust of U.S. trade policy would be to rekindle the GATT process by urging fellow members to enter into a new round of multilateral trade talks.

More than a year has passed since these policies were announced. Using a series of self-initiated cases under Section 301 of the Trade Act of 1974, the Administration has sought to eliminate certain unfair trading practices of foreign governments. A fund of money has been established to support Export-Import Bank loans as part of an effort to persuade foreign countries to restrict and eliminate commercial subsidy elements of their foreign aid grants. Bilateral talks aimed at establishing free-trade areas have been concluded with Israel and begun with Canada.

And because of a leading role taken by the Administration, a new round of multilateral trade liberalization talks—held under the auspices of GATT—has commenced in Geneva. This new round presents an important opportunity for rolling back interventionist measures and for strengthening rules of conduct in international trade. Indeed, it offers prospects to rein in the various new forms of protection that have arisen because of current weaknesses in the GATT process. The new round also provides the opportunity to extend rules of commercial relations to areas previously exempted from or not covered by GATT, including agriculture, services, direct foreign investment, and intellectual property rights.

This chapter reviews the Administration's trade policy initiatives of the past year, especially as they relate to efforts to open foreign markets. The fundamental premise behind these efforts is that free trade offers Americans the greatest hope for a prosperous future. Consequently, this chapter begins by reviewing the benefits of free trade.

## THE CASE FOR FREE TRADE

Governments have long interfered with the exchange of goods across their boundaries. One purpose of their barriers was to collect revenues through tariffs or tolls. Local industry usually supported and benefited from the protective effect of these policies. Indeed, in many instances, pressure from domestic producers induced governments to shelter them from foreign competition with trade restrictions. Another purpose was to achieve trade surpluses through export subsidies and import restrictions. These policies, whose ostensible goal was to increase and preserve domestic wealth at the expense of other countries, became known as mercantilism.

For more than 200 years, many economists have argued against mercantilist policies and made the case for free trade. They generally believe that restrictions on commercial activity reduce wealth rather than increase it. Conversely, the argument for free trade is relatively simple yet compelling.

The case for free international trade is much the same as the case for free internal trade. Commerce between the United States and Japan benefits Americans as does commerce between New York and California. The exchange of goods, internally or internationally, arises as a natural outcome of specialization. Because of factors such as climate, natural resource endowments, or technology, different economic regions possess different abilities to produce certain goods. Individuals, firms, and industries within these regions tend to concentrate their efforts in the goods and services that they are best able to produce. Then their output is exchanged in the marketplace for that of other economic agents.

Specialization allows for a more efficient use of scarce resources and permits improved productivity of the economy. The larger the size of the market, the greater are the possibilities for specialization and for increasing the wealth of the community. The extent of specialization in international trade is related to the forces of international competition. As barriers between markets are lowered, some domestic producers will face increased competition from abroad. Other producers will exploit export opportunities as accessible markets expand. Hence, production will tend to contract in industries where foreign goods are superior relative to domestic goods on a price and/or quality basis. In those industries where domestic goods are relatively superior to foreign, local output will expand. These latter industries are said to have a comparative advantage.

In essence, comparative advantage means that an industry will export if it is more efficient relative to other domestic industries. An industry's productivity relative to other industries within the same

country determines its ability to command scarce resources within that economy and, thereby, to export to the rest of the world. Thus, a local industry's efficiency compared with that industry in foreign countries is not the main determinant of whether it exports or faces import competition.

Because comparative advantage refers to an internal ranking of productivity, a country may import goods even if the local producing industry is more efficient than its foreign rival. A country will tend to concentrate production in those industries in which it has the greatest comparative advantage. Standards of living rise as resources are put to their most productive uses. One sign of rising standards of living, of course, is a rise in real wages.

A common misconception about international trade is that it is unfair. For instance, some argue that because U.S. wages are high relative to wages in other countries, U.S. producers cannot compete. This argument is true for some industries, but not true in general. U.S. wages are high because American workers are in general more productive than their foreign counterparts. The relatively high U.S. productivity comes about from this Nation's enormous stock of physical and human capital. As U.S. productivity levels increase, so do wages paid to workers. This puts upward pressure on wages even in relatively inefficient sectors of the economy. But if wages rise and productivity does not keep pace, then American firms will have trouble competing.

An instructive example comes from the U.S. steel industry. From 1965 to 1981, wages rose much faster than labor productivity in steel and faster than wages and labor productivity in overall manufacturing. As a consequence, unit labor costs increased dramatically, and the comparative advantage of U.S. steel products deteriorated badly. In other sectors where wages are relatively high but productivity remains strong, such as aircraft and computers, U.S. products compete successfully in world markets.

In addition to raising the general standard of living, the forces of free trade also produce dynamic gains for the economy. These benefits accrue because, in the absence of government intervention, investment in new plant and equipment and in research and development tends to concentrate in the most efficient sectors of the economy. This increases the rate of growth of the economy. Conversely, in an economy riddled with protectionist policies, investment is often diverted from more efficient industries because of government-induced distortions in relative rates of return.

Finally, political gains arise from free-trade policies. As countries rely more on each other for goods and services, they are more likely to settle international disputes through negotiation rather than hos-

tile action. An example is the remarkable reduction in national tensions between the countries of Western Europe since the adoption of internal free-trade policies following World War II.

It is sometimes argued that the benefits of free trade depend upon special assumptions about economic behavior. But the case for free trade is quite general. Early arguments for free trade assumed that industries were perfectly competitive and that trade arose from climatic or technological differences between countries. Later, economists focused on trade resulting from relative differences in national endowments of factors of production, such as labor and capital. In both instances, the free-trade outcome was one where production expanded along the lines of comparative advantage and countries enjoyed the consequent gains of trade.

More recent theories of international trade flows stress the importance of imperfectly competitive market structures arising from such phenomena as increasing returns to scale and domestic barriers to entry. Even here, however, free international trade is beneficial. Expansion of markets because of freer trade may allow a firm to realize economies of scale from an output level higher than would be expected in the absence of trade. These economies can then be passed on to the consumer as lower prices. Expansion of markets through free trade also leads to an erosion of monopoly power enjoyed by those industries where both significant barriers to domestic entry and foreign competitors exist. Another source of gain is the benefit to consumers from an increase in product diversity, in both quality and variety.

The benefits of free trade are relatively independent of actions taken by foreign countries. In particular, it is often argued that because protectionist policies exist in foreign countries the United States must follow suit. This argument is generally false. The benefits to the United States flow from buying goods and services for which foreign producers have a comparative advantage and selling U.S. goods and services where U.S. companies have a comparative advantage. To the extent that foreign policies reduce these trade possibilities, those countries and the United States gain less.

Furthermore, the benefits of free trade do not require that trade be balanced at any point in time. Indeed, overall trade balances and the associated international capital flows allow countries the mutual benefit of trading goods and services over time. Countries with overall trade deficits borrow from the rest of the world. Such borrowing can provide the requisite funds for financing investment expenditures crucial to economic growth. Countries with overall surpluses lend to the rest of the world. This lending raises the wealth of the country if it is allocated to projects that earn higher rates of return than would

otherwise be possible. However, neither borrowing nor lending can go on indefinitely, and economic forces will work over time to ensure that imbalances are closed. Thus, trade in goods and services between any country and the rest of the world tends to be in balance over the long run.

On the other hand, trade between any two countries may never be in balance. For a variety of reasons, countries tend to amass surpluses with some countries and deficits with others. Unfortunately, interest in bilateral trade balances—essentially a mercantilist trait—remains great. In May 1986, the House of Representatives passed an omnibus trade bill, H.R. 4800, that called for the President to identify countries that have "excessive" trade surpluses with the United States and then to negotiate with or take actions against these countries, regardless of the underlying causes of the surpluses. The President labeled the bill "kamikaze legislation" and promised to veto the measure, but it died when the 99th Congress adjourned.

Despite the obvious benefits of a liberal trading order, various forms of protection abound and are proliferating at an alarming rate. Why do governments continue to pursue these policies? Various justifications have been put forward by governments to defend protectionist policies. Examples include government revenue, national defense, unfair foreign trade practices, preservation of certain ways of life, and short-term aid to revitalize industry.

Whatever the motive, protection in any form redistributes income and wealth. And because the redistributive effects are usually not readily apparent, special interest groups sometimes favor and governments often choose these methods over other more visible and much less costly forms of subsidy. Protection raises the price of imports and domestically produced import-competing products. But, consumers are seldom aware of the tax imposed upon them by protection because they rarely have the opportunity to observe the difference between domestic and world prices. The cost of protection to consumers can be quite dramatic. For instance, the Council of Economic Advisers estimated that if Congress had been successful in its attempt to override the President's veto of the Textile and Apparel Trade Enforcement Act of 1985, Americans would have had to pay up to an additional $44 billion for textiles and apparel over the next 5 years.

Given these considerations, the Administration supports policies designed to improve the efficiency and productivity of the U.S. economy. Such steps should make Americans more prosperous. These policies include retraining for displaced workers, reforming antitrust laws, and strengthening property rights, both domestically and abroad. Other initiatives include the repeal or reform of regulations that unnecessarily impinge upon U.S. competitiveness.

## SECTORAL MARKET OPENING INITIATIVES

### SECTION 301 ACTIONS

Trade imbalances are largely macroeconomic phenomena, not related directly to market access barriers or unfair trade practices by foreigners. But trade barriers and unfair practices distort economic activity and generally harm economic efficiency. For this reason, the Administration is committed to eliminating foreign trade policies that pose a significant burden on U.S. exports.

Section 301 of the Trade Act of 1974, as amended, provides the authority and procedures for the President to act against certain unfair trading practices of U.S. trading partners. The President must first find that action is appropriate to enforce U.S. rights under any trade agreement, or to respond to any act, policy, or practice of a foreign country that (a) is inconsistent with the provisions of, or otherwise denies the United States benefits under, any trade agreement, or (b) is unjustifiable, unreasonable, or discriminatory and burdens or restricts U.S. commerce. If he so finds, then he is authorized to act to enforce these rights or to eliminate the act, policy, or practice.

Unjustifiable practices are those that violate or are inconsistent with U.S. international rights. The term "unreasonable" refers to acts, policies, or practices that are not necessarily illegal or inconsistent with U.S. international legal rights, but are viewed as being unfair. The act applies not only to practices that harm U.S. trade in goods and services, but also to actions against U.S. direct foreign investment that affect trade in goods or services.

Section 301 is administered by the Office of the U.S. Trade Representative (USTR). Petitions may be filed by any interested party or they may be "self-initiated" by USTR on its own or at the request of the President. Once an investigation has been opened, USTR, in cooperation with other U.S. Government agencies, determines the extent of harm to domestic interests and recommends action for the President. At the same time, USTR consults with the foreign government involved in the complaint and attempts to negotiate a settlement.

Depending upon the specific nature of the alleged practice, USTR has up to 12 months to conclude the investigation and recommend action to the President. If no solution is reached, USTR may recommend that the President impose duties or other restrictions on imports from the foreign country or take any other action authorized by law. Retaliatory actions taken under Section 301 may be nondiscriminatory or solely against the goods and services of the foreign country involved in the dispute. The products subject to retaliation need not correspond to the products related to the dispute.

Between January 1975 and November 1986, 57 cases had been initiated under Section 301. Table 4–1 details the disposition of these cases. In addition, numerous firms and industry groups have consulted with USTR regarding the Section 301 process or have filed and then withdrawn their petitions before a case could be initiated. More than 60 percent of initiated cases were begun under the current Administration. Until 1985, all of these came as the result of privately filed complaints. Recently, however, the role of Section 301 as an active component of U.S. trade policy has grown, with the President directing USTR to self-initiate four investigations and three trade actions aimed at the practices of several U.S. trading partners. Five of the seven proceedings have been favorably resolved, while two are pending. Brief descriptions of the circumstances of these self-initiated cases follow.

TABLE 4–1.—*Summary of cases under Section 301*

[January 1975 to November 1986]

| Category | Number |
|---|---|
| Petitions considered | 57 |
| Petitions withdrawn | 6 |
| Cases terminated: | |
| Due to resolution of dispute | 20 |
| Due to other reasons | 4 |
| Cases resulting in retaliation | 12 |
| Cases suspended | 3 |
| Cases pending | 15 |

Note.—Case resolutions do not equal number of petitions considered because cases may fall into more than one category.
Source: Compiled by Council of Economic Advisers from data provided by Office of the U.S. Trade Representative.

*Self-initiated Section 301 Cases*

On September 16, 1985, at the request of the President, an investigation was begun into practices that act as a barrier to U.S. cigarette sales in Japan. These practices included tariffs combined with internal ad valorem excise taxes, an absolute prohibition on the manufacture of foreign cigarettes in Japan, discriminatory treatment in the collection of excise taxes, and restrictions on the distribution of foreign cigarettes. Bilateral consultations were held between representatives of USTR and the government of Japan. Japan promised to suspend altogether tariffs on cigarette imports. It also agreed to eliminate the discriminatory deferral in collecting excise taxes, terminate discriminatory distribution practices, and make its price approval system virtually automatic. On October 6, 1986, the President suspended the investigation with the intent that it be terminated upon full implementation of the agreement.

In the autumn of 1985, the President directed USTR to self-initiate two Section 301 investigations against the practices of Korea. The first involved restrictions on the ability of U.S companies to sell fire and life insurance in Korea. The second was aimed at the lack of effective protection of U.S. intellectual property rights, such as copyright protection for literary and artistic works, including computer software, and patent protection for chemical and pharmaceutical products. Bilateral consultations resulted in agreements covering both complaints. The first increased U.S. market access to Korea's insurance market by allowing U.S. insurers to underwrite both life and other insurance. The second promised to expand dramatically the protection of intellectual property rights. The President approved the agreements in August 1986, and the investigations were terminated.

On August 1, 1986, the President determined that Taiwan's practice of calculating customs duties based on prices listed in duty-paying tables violated a trade agreement or was unjustifiable and a burden on U.S. trade. In effect, this practice had led to increased duties paid to Taiwan, because the prices in the tables often exceeded transactions values. Before USTR could recommend an appropriate method of retaliation, Taiwan agreed to stop the practice.

In October 1985, Taiwan agreed to provide greater market access for U.S. exports of beer, wine, and cigarettes within 6 to 12 months. In particular, Taiwan agreed to lift an import ban on beer and to allow U.S. products to be sold at all retail outlets where Taiwanese products were sold. It also agreed to limit retail markups on U.S. products to the level applied to local products and to allow market forces to determine the levels of importation of U.S. products.

On October 27, 1986, the President determined that Taiwan had not honored the agreement and accordingly found the Taiwanese practices to be unreasonable and a burden on U.S. commerce. He directed USTR to retaliate. On December 5, 1986, before the retaliation could be implemented, Taiwan agreed to settle the dispute and the President ordered the case terminated.

On March 31, 1986, the President announced his intention to impose quotas on several European Community (EC) products in response to EC restrictions affecting U.S. exports of oilseeds and grains to Portugal. He also vowed to increase tariffs on certain products if the EC did not provide compensation for reduced U.S. exports of corn and sorghum to Spain as a result of the replacement of Spain's 20-percent tariff on these products by the EC's variable levy. The EC had taken its actions in connection with the accession of Spain and Portugal to the EC.

On May 15, 1986, the President imposed quotas on EC imports in response to the Portuguese import restrictions. However, to date,

these actions have not restricted trade. On July 2, 1986, the EC and the United States reached an interim agreement, and the quotas were lifted to permit continued sales of corn and sorghum to Spain for an additional 6 months. Both sides had agreed to December 31, 1986, as a deadline for the final agreement. Unfortunately, subsequent negotiations have failed to produce a settlement. Consequently, on December 30, 1986, the President announced that ad valorem tariffs of 200 percent would be placed on certain products, primarily imported from the EC, with a trade value approximately equal to the estimated loss of corn and sorghum exports. The tariffs will be implemented no earlier than January 31, 1987, thus allowing additional time for negotiations.

On September 16, 1985, at the President's direction, USTR began a Section 301 investigation into all aspects of Brazil's computer and computer-related (informatics) products policies. Included in the investigation were practices concerning import restrictions, limitations on U.S. investment, and failure adequately to protect intellectual property rights. On October 6, 1986, the President announced that Brazil's informatics policy was unreasonable and a burden or restriction on U.S. commerce, but ordered that the case be continued until December 31, 1986, to give both sides more time to reach an agreement. In the meantime, he requested that USTR notify GATT of U.S. intentions to suspend the application of tariff concessions to Brazil and to effect such suspensions when appropriate.

In the weeks that followed the Presidential announcement, some progress was achieved on certain procedural aspects of Brazil's informatics policy. Consequently, on December 30, 1986, the President suspended those aspects of the investigation. In addition, he ordered a further extension, until July 1, 1987, to give negotiators additional time to settle remaining issues in the case.

*Analysis of Section 301 Actions*

The Administration's decision to self-initiate several Section 301 cases has sent important signals. First, U.S. industries know that if they encounter unreasonable trade barriers in foreign markets, a mechanism exists to help them overcome these barriers. Moreover, both the self-initiations and actions in cases initiated in response to industry filings demonstrate U.S. concern to its trading partners about their commercial policies. The message of the Section 301 process is that in the products and countries involved in the various cases, the United States thinks its comparative advantage is being unfairly denied.

Section 301 puts the weight of the President behind disputes over specific, narrowly defined trade practices abroad. This attention sharpens the focus of the dispute and allows pressure to build on a

clear and remediable problem. The threat of retaliation can provide leverage to negotiate an end to unfair foreign practices. Section 301 also encompasses a greater range of issues (in goods, services, investment, and intellectual property rights) than does GATT.

Section 301 should be used with caution. Actions taken under it may be perceived as an intrusion into the policies of a foreign government. And, while these policies may clearly be egregious and often lower the economic welfare of the foreign country, in some cases the threat of retaliation may not provide the best incentive for successful resolution of the issue.

Political leaders may not want to appear to be vulnerable to foreign threats and may resist a mutually beneficial agreement to preserve national pride. Thus, Section 301 cases are most likely to succeed in areas that have little economic and political significance to foreign governments, and retaliation is more likely in those cases with significant foreign national interest.

The level of contentiousness is even higher when the process is initiated at the President's direction without a petition filed by a U.S. firm or industry. In these cases, it is most unlikely that the investigation will lead to any finding other than unreasonableness. The possibility of abandoning the case because the costs of retaliation are too high is limited.

U.S. retaliation may inflict as much or more harm on the American economy as it does on its target. In addition, unless carefully handled, it is likely to violate GATT rules, undermining an already weak international dispute settlement process. Moreover, retaliation does not always stop with the issue at hand, but may escalate into further rounds of retaliation and counter-retaliation. The potential for mutually destructive trade wars rises with the magnitude of the case and with the size of the trading partner.

While the focus of a Section 301 case is usually on a specific product, the effects of a settlement may extend to other related areas. For instance, the recently concluded agreement with Japan over trade in semiconductor products has led, at least temporarily, to increases in the prices of these products. As semiconductor prices rise, the competitiveness of industries using these products as inputs may diminish.

Several proposed trade bills recently considered by the 99th Congress would have amended the Section 301 decisionmaking process. Most of these proposals are ill-advised. For instance, Senate bill S.1860 would have mandated the President to self-initiate several Section 301 investigations each year. It would also have required the President to retaliate if settlement were not reached after a fixed period of time. Such requirements add inflexibility to areas where

flexibility is vital, and do nothing to address the fundamental problem of opening foreign markets. The decision to self-initiate raises the stakes in the negotiating process. Section 301 currently allows the President to lend the force of his office in those situations where it most benefits the outcome of the process.

Finally, the credibility of U.S. complaints about foreign trade barriers depends in part on the extent of its own barriers. U.S. tariffs are low on average, but tariffs on certain products remain high and nontariff barriers affect a significant percentage of total imports. For example, the United States participates in the international Multifiber Arrangement, which authorizes complex bilateral trade-restricting agreements between exporters and importers of textiles and clothing. The United States has asked its trading partners to limit their exports of steel and machine tools and uses nontariff barriers or high tariffs to restrict trade in sugar, dairy products, lumber products, motorcycles, and a number of other goods.

### MARKET-ORIENTED, SECTOR-SELECTIVE TALKS

A much less confrontational approach to bilateral market opening is represented by a series of sectoral negotiations between the United States and Japan. Following the successful conclusion of talks to liberalize Japanese financial markets, both governments sought to address the often contentious issue of commercial trade with Japan. In 1985, high-level discussions, called Market-Oriented, Sector-Selective (MOSS) talks, began with the purpose of identifying and removing impediments to market access in Japan. Sectors initially chosen for discussion were telecommunications, electronics, medical equipment and pharmaceuticals, and forest products. Transportation machinery was added later.

The MOSS talks have shown substantial progress. Japan has implemented reforms in telecommunications, forest products, and medical equipment and pharmaceuticals. MOSS discussions on electronics were largely preempted by the semiconductor agreement. Negotiations in transport machinery, especially involving trade in automobile parts, still continue.

## RECIPROCAL MARKET OPENING INITIATIVES

Opening markets on a piecemeal basis is difficult and inefficient. A more fruitful approach is to enter into discussions with foreign governments to open all markets reciprocally. These discussions can occur on a bilateral or multilateral basis. Important progress was made on both fronts in 1986.

A free-trade area (FTA) is an arrangement between two or more countries to remove barriers to trade among themselves but to maintain separate barriers with respect to nonmember countries. The benefits from FTAs resemble those attributed to free trade in general: expansion of market size can lead to efficiency gains through specialization. Consumers gain because they pay lower prices for certain goods because of increased competition.

Conclusion of FTA agreements can help to maintain the momentum for liberalizing trade. When the international climate does not permit widespread reductions of trade barriers, liberalization among like-minded nations promotes free trade. When nations that refuse to reduce their trade barriers see that others will achieve gains from trade by reducing barriers bilaterally, they might reconsider their commercial policies and join the effort to open markets.

FTAs have their problems. The potential cost of FTAs relative to freer trade in general arises from the fact that FTAs discriminate in favor of trade between member nations and against trade with nonmember countries. Hence, the source of trade may be diverted away from the lowest cost world producer in favor of a higher cost FTA member.

Both the Administration and Congress, however, think that free-trade area arrangements are worthwhile. The Administration's 1985 trade policy statement noted that bilateral negotiations are no substitute for multilateral negotiations, but that "such agreements could complement our multilateral efforts and facilitate a higher degree of liberalization, mutually beneficial to both parties, than would be possible within the multilateral context." Congress, for its part, has granted the Administration authority to enter into bilateral trade-liberalizing negotiations.

*FTA Agreement with Israel*

The Trade and Tariff Act of 1984 specifically authorized the President to conclude an FTA agreement with Israel. Formal talks began in January 1984. An agreement was signed in April 1985 and the first stage of liberalization went into effect in September 1985.

The agreement covers both tariff and certain nontariff barriers that exist between the two countries. Although most substantive elements of the agreement address liberalized trade in goods, some relate to trade in services and protection of intellectual property rights.

The U.S.-Israel FTA is the first such agreement reached by the U.S. Government. One motivating factor for negotiating this agreement was Israel's previous entry into a similar agreement with the EC covering trade in manufactured products. By negotiating an FTA

with Israel, the United States regained the competitive advantage that U.S. exporters had lost to their European competitors.

*FTA Talks with Canada*

More trade passes between the United States and Canada than between any two other countries. In 1985, this trade totaled about $120 billion. Canada is this country's largest foreign market, accounting for 22 percent of total merchandise exports. The United States is Canada's largest market, purchasing more than 75 percent of total Canadian exports. The two countries engage in substantial trade in services. In addition, about 20 percent of U.S. direct foreign investment is in Canada.

Over the course of U.S.-Canada relations, special trade pacts have periodically been considered. From 1855 to 1866, trade between the two countries was governed by special treaty. Since 1965, the United States and Canada have had a sectoral agreement covering trade in automobiles. However, more comprehensive and longstanding agreements have eluded American and Canadian negotiators for decades.

Recently, a new effort to reinforce U.S.-Canada economic ties began. On September 26, 1985, the Prime Minister of Canada called for negotiations between the United States and Canada to achieve "the broadest possible package of mutually beneficial reductions in barriers to trade in goods and services." The Administration welcomed this proposal and formally notified Congress in December 1985 of its intent to enter into negotiations under the negotiating authority established in the Trade and Tariff Act of 1984. These negotiations were begun in May 1986.

After consultations with advisory committees representing industry, labor, and agriculture, the Administration developed objectives for the talks. The first objective is the elimination of Canadian tariffs. A second broad goal is the elimination of nontariff barriers to certain U.S. exports. The United States is also interested in eliminating barriers to foreign investment in Canada, liberalizing trade in services, and protecting intellectual property rights.

Canadian objectives include reducing U.S. tariffs and improving access to the government procurement process, both Federal and State, from which Canadian vendors have often been excluded because of various Buy American provisions. Both sides seek a dispute settlement mechanism that could be used to enforce any agreement emerging from these negotiations and to deal with individual disputes in the future.

The mutual economic gains of liberalized trade with Canada are likely to be substantial. The United States would benefit because Canadian tariffs are quite high and hence reduction of these barriers could lead to increased market access for U.S. exporters. Canada

would gain from taking advantage of the economies of scale that it could achieve through producing for a market ten times larger than its own. Both countries also stand to gain in many nonquantifiable ways, not the least of which is the reduction of commercial tensions.

Since 1981, the Administration has concluded or examined comprehensive bilateral trading arrangements with several countries. Although such arrangements are better, in general, than sectoral negotiations between countries—and far better than negotiations conducted under threat of retaliation (such as Section 301)—multilateral trade talks are the most efficient and all-encompassing means by which to reduce global trade barriers. Hence, the Administration has placed strong emphasis on a new round of GATT talks.

## THE NEW GATT ROUND

An important Administration success in trade policy has been the launching of a new round of talks in GATT to reduce barriers to international trade and to strengthen and improve the global trading system. The announcement of an agreement to begin this new round was made at an international gathering of trade ministers at Punta del Este, Uruguay, on September 20, 1986. Organized discussions began on October 27, 1986; the negotiations are scheduled to continue for 4 years.

The Uruguay Round holds considerable promise for U.S. commercial interests. In addition to traditional areas, new topics that will be considered in the negotiations include trade in services, treatment of foreign investment, and protection of intellectual property rights. The Administration played a key role in ensuring that these issues would be included in the talks.

### *History of GATT*

GATT was created at the end of World War II as one of several international agreements designed to promote world peace and development. It serves both as a forum for trade liberalization talks and international commercial dispute settlement and as a multilateral body that sets rules of conduct in international commerce. Countries that agree to follow GATT rules are said to be contracting parties. As of December 1986, GATT comprised 92 contracting parties, including all developed Western economies. In addition, numerous developing countries, as well as several Eastern-bloc countries, are GATT contracting parties. Together, GATT members account for about 85 percent of international trade.

As a code of commercial conduct, GATT prohibits quantitative restrictions on trade in goods, and the GATT subsidies code outlaws government export subsidies for nonagricultural products. It does permit certain protective measures for balance of payments reasons,

to provide temporary relief for local industries in distress (i.e., safeguards protection), or to promote infant industries in developing countries. GATT has procedures for settling disputes arising between members. The dispute settlement process may sometimes be long and problems over compliance with decisions may develop. In the Uruguay Round, the United States hopes to streamline and strengthen the dispute settlement process.

Since 1947, GATT has served as a forum for seven rounds of talks aimed at reducing international barriers to trade. Perhaps the two most successful and well-known are the Kennedy Round of the 1960s and the Tokyo Round of the 1970s. The major achievement of the Kennedy Round was across-the-board tariff cuts, averaging 35 percent, on manufactured products. In the Tokyo Round, manufactured goods tariffs were cut again, this time an average of 31 percent. In addition, codes concerning nontariff barriers, such as government procurement practices and customs valuation procedures, were established.

The operating principle underlying the agreements to cut tariffs is the unconditional most favored nation (MFN) treatment among countries. This notion holds that if a contracting party grants trade concessions to another contracting party or to a nonmember country, it must grant the same concessions to all contracting parties. The economic basis for this principle is sound. Because all countries belonging to GATT are treated alike, and because GATT members account for most of world trade, trade flows will tend to occur along the lines of comparative advantage. Thus, potentially trade-distorting discriminatory treatment is minimized. The MFN rule also protects small countries by preventing big countries from negotiating exclusive mutual concessions. Thus, less developed countries benefit from the full weight of U.S. influence in negotiating trade concessions. The MFN rule is extremely efficient in that it enables countries to avoid the huge administrative costs of conducting the thousands of bilateral trade agreements that are the effective equivalent of a multilateral GATT round.

### ADMINISTRATION AIMS IN THE NEW GATT ROUND

Talks in the new round will be conducted on the basis of a comprehensive agenda in two parallel areas, one involving trade in goods and the other trade in services. The negotiations involving trade in goods represent an extension of previous negotiations. Topics to be addressed include tariff and nontariff barriers, trade in tropical and natural resource based products, textiles and clothing, agriculture, and trade-related investment and intellectual property rights issues. In addition, negotiations will seek to strengthen GATT rules related

to subsidies, dispute settlement, and safeguards protection. The talks involving trade in services represent the first multilateral negotiations ever undertaken on this issue.

*Dispute Settlement*

GATT acts as a forum for the settlement of disputes concerning the rules and obligations set out in the GATT agreement. In the first years of GATT, the dispute settlement process was effective in interpreting the rules of GATT and pressing countries to adhere to GATT rules. Beginning about 1960, however, confidence in GATT procedures and compliance with its rules began to wane. The Tokyo Round attempted to tighten the dispute settlement process, but significant problems remain.

Basic weaknesses pervade the settlement process. The fundamental problem is delay. It is not atypical for cases to drag on for several years. Under current arrangements, parties to a dispute can block adoption of settlement recommendations, thereby compounding the problem of unsuccessful resolutions. Furthermore, the process is least effective where GATT rules themselves are weak or ambiguous, as with agriculture.

The United States is strongly committed to repairing and improving the dispute settlement system. The Administration supports new rules and procedures designed to restore international confidence in the system. Included in these rules would be the development of new arrangements to ensure compliance with GATT rules and rulings. New and strengthened trade rules make no sense for the world trading system without effective enforcement.

*Trade in Services*

From 1950 to 1985, the production of services increased as a share of total U.S. output from 47 to 57 percent. As employment in manufacturing was falling as a share of total employment, employment in the services sector was rising faster than total employment. Today, about 60 percent of American jobs are in the nongovernmental services sector. Between 1950 and 1980, real service exports rose faster than real GNP. Other developed economies have shared similar experiences. In the economies of developed countries, on average, services now account for about 50 percent of value added and constitute approximately 20 percent of international trade.

Despite the growing importance of the production and trade of services in the U.S. economy and the economies of other developed countries, little has been done to limit government policies that restrict or distort trade in services. A key element of the Ministerial Declaration at Punta del Este was the establishment of a negotiating

group on services: the object is to fashion a legal framework to reduce barriers to and govern trade in services.

The agreement to consider trade in services required considerable effort by U.S. negotiators. Opposition to negotiations over services was largely related to issues of national sovereignty. Several countries remain concerned about their ability, in the face of foreign competition, to develop domestic services industries in such sectors as telecommunications and insurance. Moreover, these countries fear that without domestically supplied services they will be at risk. These familiar mercantilist arguments have no more validity in this instance than they do with trade in goods.

The Administration has stated objectives regarding talks in services. It would like to see a legal framework that consists of at least the following elements: transparency of restrictions, so that all parties to the agreement are aware of laws and regulations in place to protect local industry; open regulatory procedures; limitations on the activities of local monopolies; a dispute settlement process; and a commitment to pursue liberalization in future talks.

Negotiators will still face the appropriate definition of the service sectors. The Administration seeks a framework covering activities readily traded internationally, including but not limited to, insurance, telecommunications, data processing, shipping, aviation, construction, and engineering. A second and potentially more difficult problem lies with the measurement of production and trade in services. For most countries, adequate data on trade in services do not exist. Developing better measures of activity in the services area could be an important by-product of the Uruguay Round.

*Investment*

The international diversification of capital through direct foreign investment raises economic welfare around the world. In countries that receive the investment, standards of living rise because real wages rise, resources are used more efficiently, and technology levels increase. Countries that export financial capital under free market conditions also benefit because they allocate their capital to projects that earn higher rates of return than could have been earned otherwise. Thus, the international flow of capital between countries is mutually beneficial, in a fashion similar to the free exchange of goods.

Governments that unnecessarily restrict the location and operation of foreign capital lower the welfare of their citizens by lowering their incomes. All investment policies that distort or impede trade alter the pattern of trade away from that dictated by comparative advantage and lower the economic well-being of both the countries that impose the laws and the rest of the world.

The United States has traditionally welcomed foreign investment and only limits it in a few sensitive areas, generally on essential national security grounds. Many countries have established free-trade zones and offer incentives to potential foreign investors. In effect, they subsidize direct foreign investment in their countries and thereby distort capital and trade flows. Typical trade-distorting incentives include performance requirements, which establish minimum export levels expected of the foreign corporation. Laws that require the use of domestic parts or labor, exchange controls, controls on technology transfer, local equity requirements, and regulations on licensing, research, and development are other common restrictions. In the Uruguay Round, the United States will seek to develop effective multilateral disciplines over the whole range of trade-distorting investment measures.

*Intellectual Property Rights*

Economic growth is spurred through the inventive, innovative, and creative activities of individuals and companies. When the resulting ideas are disseminated widely, the ideas of one person often contribute to the creative activities of others. In order to encourage this process, countries establish systems of laws to promote and protect inventions, literary and artistic works, trademarks, and other forms of intellectual property. These patent, copyright, and trademark laws provide incentives to create intellectual property by granting exclusive rights to their creators. For instance, patents afford inventors time to recover their investment and the costs of creating and marketing inventions. Copyrights give authors control for a period of time over the reproduction, dissemination, and public performance of their works. Trademarks assure consumers about product characteristics such as quality.

Different countries provide different levels of intellectual property protection. The United States seeks comprehensive protection for all forms of intellectual property. Certain other nations afford little protection to foreign holders of intellectual property or limit protection in several important areas. Some countries provide only minimal protection and use compulsory licensing to acquire foreign technology or reproduce copyrighted works. This problem is becoming increasingly important as U.S. producers expand the marketing of items such as computer software and pharmaceutical products abroad.

The Administration hopes the conclusion of an enforceable multilateral trade agreement will eliminate trade-distorting practices arising from inadequate protection of intellectual property. Part of this agreement would seek the adoption by GATT members of minimum standards of protection contained in existing international conventions where the United States perceives standards to be adequate. In

areas where no convention exists or the standards under existing conventions are considered inadequate, the Administration will seek greater protection.

*Agriculture*

Trade policies affecting agricultural products are perhaps the most difficult and contentious issues awaiting the new round. Virtually all countries distort their trade in agriculture through tariffs, quotas, and export subsidies.

Industrialized countries adopt domestic agricultural policies aimed at raising farm income. Instead of providing farmers with income transfers decoupled from production, governments employ price-distorting policies that encourage agricultural production. In order to limit the cost of these programs, governments typically will also impose import tariffs or nontariff barriers, such as quotas or variable levies, and may subsidize the export of unwanted surpluses of domestic production. Thus, a direct relationship exists between domestic agricultural policies and the distortion of agricultural trade.

The cost of these policies, to both consumers and taxpayers, is exceedingly high. Consumers are often forced by their governments to pay several times more than world price for the same product. For instance, the price of sugar in the United States has recently been 300 percent above the world price. Japanese consumers currently pay eight times the world price for rice. Beef prices in the EC are currently more than twice world prices.

The budget costs are also enormous and are worsening. Trade in agricultural products should be determined by comparative advantage; instead it is determined by which government is willing to tax its own citizens the most in order to subsidize domestic producers. This situation has prompted competitive, countersubsidy trade wars among the industrial countries in an effort to capture world markets. It is not surprising that the predominate source of all GATT dispute settlement cases has been agricultural trade. The same is true for Section 301 cases. Current rules on agricultural trade are weak, vague, and easily circumvented. Practices are tolerated that GATT has elsewhere forbidden.

The keen interest of the United States in negotiating tougher rules to govern agricultural trade stems in part from its role as a major exporter of agricultural products. In 1985, U.S. farm exports totaled $29.6 billion, accounting for 13.9 percent of U.S. merchandise exports. U.S. agricultural exports have been declining rapidly, however. In 1981, the peak year for U.S. trade in this area, exports totaled $43.8 billion, 18.7 percent of all U.S. merchandise exports. Some of the loss of export markets can be attributed to the strength of the dollar. In addition, recent technological advances in agricultural pro-

duction have allowed countries that were only recently net importers of agricultural products to increase their production levels and become net exporters. High support prices in other countries have had similar effects. For example, in the mid-1970s, the EC was a net importer of 25 million tons of grains—20 percent of world trade in these products. By 1985, largely because of its internal farm policies, the EC had become a net exporter of 16 million tons, a swing of 41 million tons in the world market in a decade.

Some of the lost market for U.S. products has been caused by the production and export subsidy practices of certain competing nations. In order to stave off this reduction in markets, the United States has resorted to subsidizing exports. The Uruguay Round offers the opportunity to end this costly and counterproductive subsidy war. Stable, undistorted world agricultural markets offer the best opportunity for America's farmers to export their products.

The United States seeks to improve the climate of international agricultural markets by bringing them under effective and enforceable multilateral rules. The United States hopes the Uruguay Round will make progress in reducing import restrictions on agricultural products, in outlawing export subsidies, and in reducing other forms of market barriers in developed and developing countries alike. Clearly, the key to achieving fundamental reform in this area will be for countries to agree to eliminate distorting domestic agricultural policies.

## CONCLUSION

The Administration seeks to open foreign markets to U.S. exporters. Administration actions include the increased use of Section 301, which attacks specific foreign trade practices; the initiation of negotiations leading to bilateral free-trade areas between the United States and several important trading partners; and the achievement of a new round of multilateral trade liberalization talks in GATT.

The Administration's approach stands in sharp contrast to efforts proposed by some to attack the trade imbalance with protectionist policies. Instead of bilateral market opening, these forces recommend bilateral restrictions. Instead of multilateral trade liberalization, they call for general import surcharges. Calls for protection ignore its cost to consumers, its deadening effect on the efficiency of U.S. industry and the global economy, its invitation to counter-retaliation that stings U.S. exporters, and the inspiration it gives to other industries to seek government assistance in the guise of import relief. Raising trade barriers would only reduce the opportunities to open world markets for American products. Through its efforts to contain and reverse the growth of protectionism both at home and abroad, the Administration hopes to ensure that the postwar expansion continues in the years to come.

CHAPTER 5

# Toward Agricultural Policy Reform

U.S. AGRICULTURAL PROGRAMS have resulted in enormous budgetary costs, benefits that do not reach those most in need, huge surpluses of farm products, major trade disputes with other countries, and great harm to well-functioning international markets. Programs instituted at the Federal level have distorted economic incentives sufficiently to create serious long-term problems. Programs for some commodities have imposed substantial losses on consumers. Chronic surpluses of major commodities exist throughout the world, largely because of high U.S. Government target prices and heavy subsidization of agricultural production by most other developed countries.

Despite the massive taxpayer and consumer costs of current programs, the U.S. agricultural sector faces its most severe economic crisis since the 1930s. Instability within the sector continues, with little improvement apparent in the financial condition of many family farms and rural banks. Soil erosion and the pollution of surface and groundwater with toxic waste continue with only moderate signs of relief.

Agricultural policies have become contentious issues of immense importance to all countries. The shift in U.S. agriculture from its prosperous state in the inflationary period of the 1970s to its unsettled existence in the 1980s is linked to events abroad and to the policies pursued in both the agricultural sector and the U.S. economy in general. For these reasons, this chapter focuses on the current state of U.S. and world agriculture, how the Nation arrived at this state, and what public policies would foster a healthy U.S. farm economy.

## CHANGES IN U.S. AGRICULTURE

Over much of the 20th century, agriculture has been one of the most innovative and productive sectors of the U.S. economy. In the 1930s, no perceptible difference in crop yields was visible among the United States, England, India, and Argentina. In the subsequent 50 years, however, U.S. agricultural productivity has increased dramati-

cally. It has grown faster than other industries and, until the mid-1970s, faster than agricultural productivity in other countries.

Farmers in the United States represent less than 3 percent of the civilian labor force, but they produce enough food to feed the entire domestic population, while maintaining the capacity to export large quantities to the rest of the world. Farming operations represent only one component of a total food and fiber system that embraces all activities from the provision of farm inputs through commodity production and on to final consumption. Defined in this fashion, the food and fiber system accounts for approximately one-fifth of the Nation's gross national product (GNP) and slightly more than one-fifth of total labor force employment.

Factors that affect U.S. agriculture can be categorized as follows: macroeconomic, financial, and exchange-rate factors; demand and supply; and agricultural and food public policies. The interaction of these three forces, along with the inherent instability of the U.S. agricultural sector, explain the changes in the U.S. food and fiber system.

During the 1970s, the combination of these forces had the effect of pushing agricultural prices and incomes to record levels. In the 1972–73 period, the fall in the U.S. dollar, the emergence of a well-integrated international capital market to finance trade, the lack of supply response in many foreign countries due to trade barriers, and the growth in real income around most of the world boosted demand sharply for U.S. farm output. The elimination of the huge U.S. governmental stocks in 1972 that had accumulated during the 1960s made the system more vulnerable to shocks.

Throughout the 1970s, supply and demand worked both to expand world agricultural trade and to increase the U.S. share in trade at an unprecedented pace. Foreign food consumption grew by 34 million tons per year while the annual average increase in foreign grain production was only 24 million tons. For the decade as a whole, world trade expanded fourfold while U.S. exports increased sixfold. By 1980, more than one-third of U.S. cropland was committed to producing for export, while 2 out of every 5 tons of farm products traded were produced in the United States.

Rapid inflation in 1973–74 and again in 1978–80 boosted nominal agricultural prices and helped drive up the price of agricultural land. Higher land prices made additional borrowing more attractive, which was further stimulated during much of this period by negative real interest rates.

In the early 1980s, the forces that stimulated the agricultural prosperity of the 1970s reversed direction. The need to control inflation led to a mix of U.S. fiscal and monetary policies that drove ex post real interest rates to postwar highs. The rise in the value of the

dollar in the first half of the 1980s, the worldwide recession that reduced demand for U.S. exports, the increase in supplies of agricultural products from other countries, and record U.S. crops in 1981, 1982, and 1985 all combined to reduce world prices and U.S. export sales. The Food and Agricultural Act of 1981 made it more profitable for U.S. farmers to forfeit their output to the Commodity Credit Corporation (CCC) at rigidly fixed loan rates than to export at lower world prices. This imbalance led to larger and larger stocks and, in turn, to larger and larger acreage reduction programs, which culminated in 1983 with more cropland idled in the United States than all of Western Europe planted to crops.

The decline in the growth rate of worldwide consumption in the 1980s was attributable to the low rate of income growth in much of the world and, in many countries, the high interest costs of large external debt. The rate of growth of consumption decreased from 34 million tons of grain to 19 million a year. With foreign grain output increasing 29 million tons per year during the 1980s, the 10-million-ton yearly increase in net foreign grain imports of the 1970s was replaced by a 10-million-ton annual decline during the 1980s.

Throughout the developed world, increasing self-sufficiency has severely contracted available export markets. For example, during the 1970s, the European Community (EC) was a large net importer of grains. In particular, in the mid-1970s, the EC imported about 25 million tons of grain, a fifth of world trade. By 1985, the EC was exporting 16 million tons. That change reduced the annual size of the world market available to the United States by 41 million tons a year in a single decade.

With falling rates of return to agricultural production during the 1980s and the increasing attractiveness of financial instruments, the value of agricultural assets, particularly land, dropped sharply. The change in asset values resulted in a loss of owners' equity since 1981 of almost $300 billion. Owners' equity can no longer shield many farmers from their debt repayment problems, resulting in an increased frequency of farmer bankruptcies and rural bank failures.

### MARKET, GOVERNMENT, AND RESOURCE RISK

The special characteristics of U.S. agriculture include inherent instability and uncertainty because of unpredictable weather patterns, the lack of complete insurance markets for sharing risk, the immobility of certain resources in farming, and particular environmental effects of farming on the Nation's resource base.

Some human resources are trapped in farming with few off-farm rural employment opportunities. Despite falling commodity prices and widespread overcapacity, many farmers are reluctant to enter

other occupations. This reluctance is reinforced by government policies that encourage an overcommitment of resources to the agricultural sector. However, the immobility of farmers has declined as a distinguishing characteristic of U.S. agriculture as farms have grown larger and have become more integrated into the rest of the economy.

Macroeconomic developments induce increased volatility of commodity prices. Because agricultural prices are generally more flexible than nonagricultural prices—due to product homogeneity, modern integrated markets, biological time lags, and shorter contracts—monetary shocks cause agricultural prices to respond sharply while leaving other prices relatively unchanged. This phenomenon helped fuel the explosion of agricultural prices in the 1970s and their dramatic fall in the early 1980s.

Public policies have been designed to reduce the risk associated with high variations in commodity prices and production in the agricultural sector. Farm policies, such as price stabilization schemes and crop insurance, are supposed to help the agricultural sector cope with the capricious nature of its physical and economic environment. When the government guarantees farmers a certain price, for instance, it absorbs risk and eliminates some of the uncertainty faced by many in the agricultural sector.

While government policies have absorbed risk in many instances, government itself has also created risks by contributing to commodity market instability. The Food and Agriculture Act of 1977 changed commodity programs to permit a wider fluctuation in prices. The export embargo of 1980, variations on the rules of the Farm-Owned Reserve program since 1980, the payment-in-kind program of 1983, and the issuance of generic certificates of 1986, to name but a few large government agricultural programs, make it clear that policy uncertainty can be a major contributor to private commodity market instability. In addition, the mere existence of governments is one reason why private stockholders may not store commodities for extreme contingencies and, thus, provide needed price stabilization.

If complete risk markets existed, the inherent instability and uncertainty within the agricultural sector would not be sufficient justification for public policy. One reason more comprehensive risk markets do not exist within the agricultural sector is because of heavy government involvement. So much of the risk is borne by the public sector that little incentive exists for the emergence of private institutions to manage inherent instabilities and risk. For example, the introduction of commodity futures options markets has provided an important mechanism for hedging risk. Options markets allow agricultural producers, merchants, and processors to take advantage of favorable prices while limiting the risk associated with harmful price move-

ments. These risk-transfer mechanisms offer distinct advantages to producers relative to traditional futures markets because of the avoidance of margin calls and their associated demands on liquidity. However, because of government policy most farmers have little if any incentive to use these options markets.

Government policy, while perhaps achieving its direct goal, may have side effects and consequences that are unanticipated and unintended. Once it is known that the government intends to redistribute income from one group to another, specific economic groups lobby the government to gain these lucrative transfers for themselves. If, for instance, the government has reduced the downside risk in producing certain commodities, farmers will specialize in these commodities because they offer a less variable rate of return than was previously the case. Farmers will then also have an economic incentive to push for the political maintenance of that government program from which they benefit.

Environmental effects of farming activities justify some corrective public policy. Some lands currently under cultivation are highly erodible. Current irrigation levels with average precipitation result in "mining" of more than 22 million acre feet of water from aquifers in the Western United States. Nationally, nearly a quarter of the groundwater used by agriculture is not replenished. Groundwater contamination from agricultural as well as nonagricultural sources has also become serious in many parts of the country. Western irrigation practices have raised groundwater salinity. Perhaps one-quarter of the lands currently under irrigation in the West depend heavily on nonrenewable water supplies, and the productivity of several million additional acres is threatened by rising salt levels. Excessive application of fertilizer, pesticides, and other chemical uses in agricultural production generate much of these off-farm environmental risks and adversely affect the quality of groundwater and surface water.

## THE STRUCTURE OF AMERICAN FARMS

Today, slightly more than 2 million farms in this country have gross sales exceeding $1,000, a third of the number 50 years ago. Although the rate of decline has slowed, fewer but bigger farms are expected in the future. Over the past 50 years, average farm size has increased in terms of sales, acreage, and the real value of assets.

The population of farms can be divided into three groups. First, a large number (1.6 million) of farms have gross sales under $40,000 per year. More than one-third of all farms have sales less than $5,000, and three-fifths have sales less than $20,000. The farms with sales under $40,000 per year account for 72 percent of all farms, but only generate 10.3 percent of gross farm income. Net farm

income is usually a minor component of average income for these farms—in fact, averaging a $1,635 loss in 1985. But off-farm income averaged $20,740 per farm. These farms are minimally affected by agricultural policies and, in fact, receive only 9.5 percent of government payments.

A second class of farms have sales from $40,000 to $250,000, constitute about a fourth of all farms (544,000), and account for 40.9 percent of gross farm income. For these enterprises, farming is the major occupation and livelihood of their owners, and family members provide most of the labor. Off-farm income amounts to 55 percent of net farm income, and they receive 58.6 percent of direct government assistance to agriculture.

Finally, a small number of farms (93,000, or only 4.1 percent of all farms) have gross sales of more than $250,000 and account for 48.8 percent of gross farm income. Off-farm income constituted only 10.2 percent of net farm income for this group. The largest farms gain disproportionately from government support. Those with sales over $250,000 receive 32 percent of government payments, while those with sales over $500,000, representing 1.2 percent of all farms, receive 13.3 percent of such assistance.

In terms of income and assets, farming is not as badly off as is sometimes popularly portrayed. Individual hardship cases do indeed exist. Compared with the past, however, poverty or low farm income is not as important a rationale for farm policy as it once was. Average net cash income per farm was $11,745 in 1960, or 58 percent of median family income, but, in 1985, stood at $19,256, 69 percent of median family income (all figures in 1985 dollars). In 1986, government payments were high enough to pay an equivalent of $42,000 to each U.S. commercial farm (those with sales above $100,000) while U.S. median family income was $27,735.

The current financial stress suffered by farmers has focused attention on the debt/asset position of farming as a whole. The agricultural sector had $866.8 billion worth of assets, primarily in land, and $204.9 billion of debt as of December 31, 1985. Because of the dramatic declines in land values and the large accumulation of debt during the 1970s, the debt relative to net farm income currently is almost twice as high as 15 years ago.

## CURRENT AGRICULTURAL POLICY: PROBLEMS AND OUTLOOK

Public policy has played a major and, in some instances, dominant role in U.S. agriculture over the past 50 years. The Food Security Act of 1985 is the most recent omnibus farm law that provides the

basic authority for implementing U.S. food and agricultural programs. Like the 1981 act, the 1985 legislation provides income support to farmers through deficiency payments. Deficiency payments are computed as the difference between the target price, which is set by law, and the higher of the basic loan rate or the average price received by farmers over the first 5 months of the marketing year. Loan rates for each commodity are announced by the Secretary of Agriculture before the commencement of the marketing year. The Secretary has some discretion in the case of feedgrains and wheat to lower the loan level up to 20 percent below the basic loan rate. For soybeans, the loan level can be lowered no more than 5 percent. For cotton and rice, the effective loan is set at world market prices. As a result, cotton and rice farmers participating in government programs can first pledge their output as collateral for a loan at the basic rate, and at maturity repay the loan at the then world market price if it is lower than the basic rate.

The payment base for each farmer is determined by base acreage and "program" yield (based on the individual's or county's past yields), adjusted for any acreage reduction programs. For the 1987 crop year, deficiency payments are limited to $50,000 and loan deficiency payments, based on the difference between the basic loan rate and the Secretary of Agriculture's announced loan rate, are limited to $200,000. For cotton and rice, the $200,000 limit pertains to the difference between the basic loan and the marketing loan repayment rate. Chart 5–1 shows the recent history and current legislative provisions for target prices, loan rates, and market prices for corn.

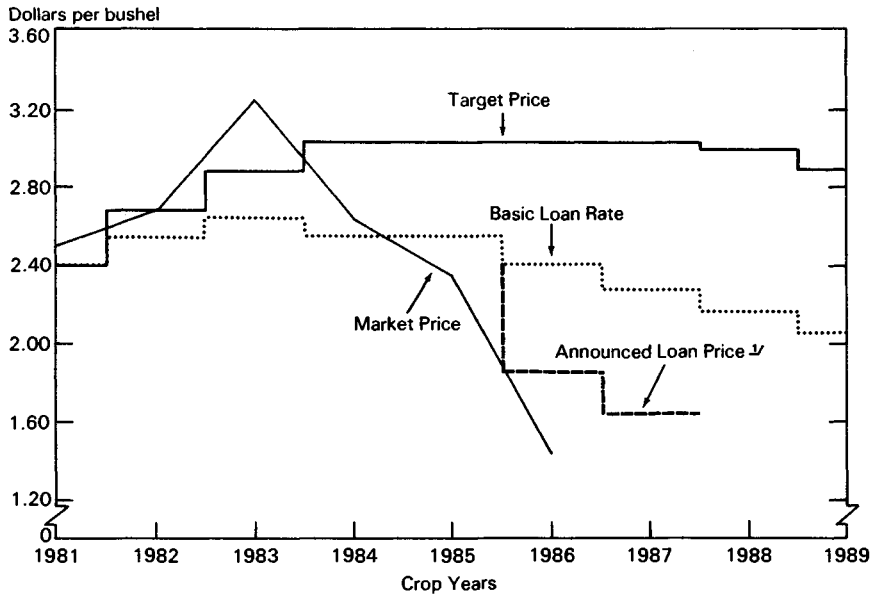
As with previous legislation, the 1985 act requires acreage reduction programs in an attempt to manage total market supply. In essence, the government induces farmers to participate voluntarily by offering subsidies in the form of deficiency payments. In return, the government asks the farmer to idle some portion of the farm's land. By idling land, the government hopes to reduce supply to markets, thereby raising market prices and indirectly lowering the amount of deficiency payments.

Some features of the 1985 act allow market discipline to operate while other features have moved U.S. agriculture farther away from the free market. The former features include the dramatic reduction in operative loan rates for several important commodities. In the case of cotton and rice, the introduction of the marketing loans has eliminated price supports. This particular feature, however, has increased significantly the cost of these commodity programs to the government.

Moreover, the use of generic commodity certificates has reduced the effectiveness of the loan rate as a price floor for corn and wheat.

Chart 5-1

Corn: Target Price, Loan Rate, and Market Price




1/Set by the Secretary of Agriculture within mandated limits.
Source: Department of Agriculture.

The negotiable generic commodity certificate allows the holder of the certificate to take ownership within a specified period of time, usually 9 months, of most commodities that are held in CCC stocks. The certificates may also be exchanged for cash or used to redeem outstanding commodity loans. The certificates are specified in dollars and can be exchanged for a quantity of the commodity based on local market prices. Thus, CCC stocks can be placed on the market even when prices are below loan levels.

The reduction in price supports has made the United States more competitive internationally and, in the case of some commodities, lowered prices for U.S. consumers. Other features of the act also gradually lower direct income support for some commodities. In particular, the act allows a producer to receive deficiency payments on 92 percent of permitted acreage if 50 percent or more of eligible land is planted. In this instance, permitted acreage is defined as the acreage that remains after land has been idled under an acreage reduction program.

The 50-92 provision provides a partial decoupling of the link between deficiency payments and planted acreage. Because farmers can

collect payments on 92 percent of the permitted acreage, the only reason to plant more than 50 percent is if the market price or the loan rate exceeds variable production costs. However, if farmers choose to plant less than 92 percent of eligible acreage, they cannot grow other crops on the land that is idled. Very little use was made of the 50–92 provision during the 1986 crop year, in part because of the large setup costs associated with planting any portion of a farmer's acreage base.

Another instance of partial decoupling is the freezing of historical program yields in the determination of deficiency payments. This change means that farmers no longer have an incentive to manipulate their yields in current and future years in order to increase the level of production on which deficiency payments are determined.

Between 1981 and 1985, the Federal Government spent about $60 billion on farm price and income-support programs. The original estimate for farm program outlays for 1986 was significantly below the actual cost of $25.9 billion associated with CCC activities to support the agricultural sector. Other related programs also support agricultural production and rural America; in 1986 the outlays for these programs amounted to approximately $14 billion. The largest single item was Farmer Home Administration outlays at $8 billion.

Other features of current programs act directly or indirectly on the demand for farm output. Major trade programs include amendments to the Agricultural Trade Development and Assistance Act of 1954 (Public Law 480), short- and intermediate-term trade credit guarantees, targeted export assistance, and the export enhancement program. In fiscal 1986, the value of commodities exported under Public Law 480 (both Titles I and II) amounted to $1.4 billion; $2.5 billion of export guarantees were provided; and the export enhancement program that subsidizes U.S. agricultural sales abroad cost the U.S. Government nearly $0.75 billion. In the domestic market, food assistance programs cost $20.2 billion in fiscal 1986; the bulk of this expenditure supports the food stamp program and the women, infants, and children feeding program.

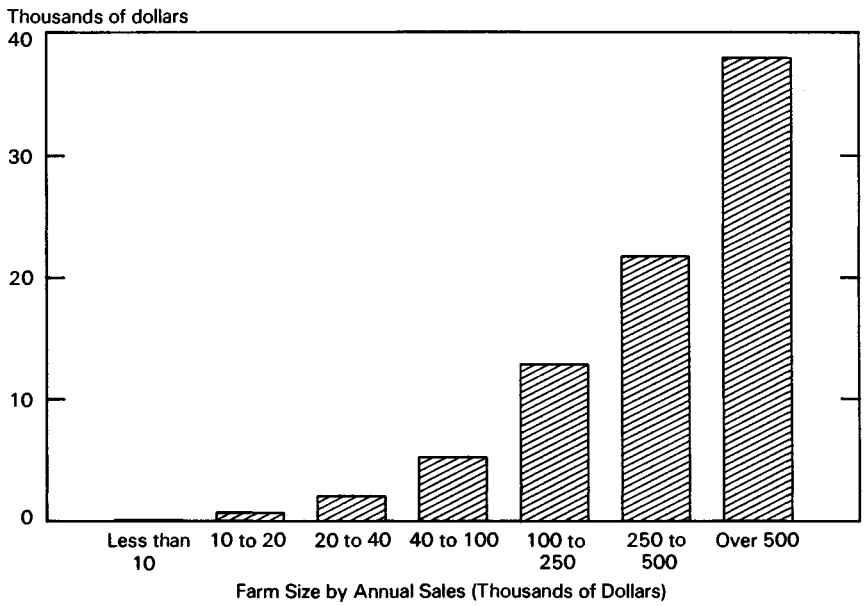
Target prices, the remaining partial coupling of deficiency payments to production, and the implied export subsidies have continued to cause distortions in economic incentives and further misallocations of economic resources. Moreover, the 1985 act has continued to impose waste and economic losses on the American economy in other commodity programs, especially sugar and dairy. Over much of the 1980s, taxpayer costs of government programs designed to support U.S. agriculture have been at record levels. In 1980, government outlays for corn, wheat, and rice represented less than 7 percent of the crop value. This share grew to about 57 percent by 1986.

Given the current level of the Federal budget deficit, growth in the outlays for agriculture simply cannot be sustained. Unfortunately, program expenditures are not expected to improve much during fiscal 1987 with CCC outlays for direct income and price supports projected to be between $23 billion and $28 billion.

Furthermore, the distribution of program benefits is viewed by many as inequitable. The benefits provide little assistance to those suffering the greatest financial hardship. As is shown in Chart 5-2, government payments are concentrated among the larger farming operations, with the average payment to all farmers having annual sales exceeding $500,000 per year being almost $40,000. Since many large farms do not produce commodities eligible for government programs, participating farms receive considerably more than this $40,000.

Chart 5-2

Average Direct Government Payments per Farm by Sales Class, 1985




Source: Department of Agriculture.

The commodity programs with the largest outlays include corn, wheat, cotton, and rice. Table 5-1 shows how much is going to the growers of various crops and what proportion of farmers are receiving

large payments. One large California cotton producer is expected to receive more than $12 million in CCC payments; the crown prince of Liechtenstein as a partner on a Texas rice farm received a subsidy of more than $2 million; and 112 dairy producers in California, Florida, Idaho, Texas, and Arizona received payments exceeding $1 million each under the dairy termination program.

TABLE 5-1.—*Direct government payments for 1986 agricultural programs*

| Program | Payments | | Payees receiving over $50,000 | |
|---|---|---|---|---|
| | Total (millions of dollars) | Average payment to all payees | Portion of all payees | Portion received of total payments |
| | | | Percent | |
| Corn | 6,147 | $8,000 | 6 | 24 |
| Wheat | 3,454 | 6,000 | 1 | 9 |
| Cotton | 1,523 | 14,000 | 12 | 55 |
| Rice | 814 | 25,000 | 20 | 61 |

Note.—Data are estimates for 1986 crop year.
Source: Office of Management and Budget.

## FINANCIAL STRESS AND ECONOMIC WASTE

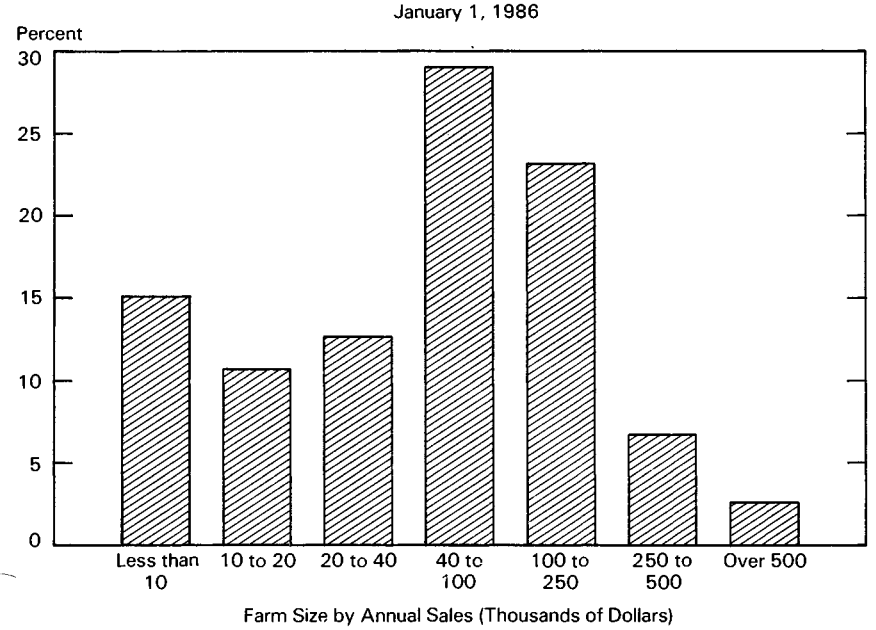
Financial stress in U.S. agriculture continues to be a serious problem. Approximately 11 percent of all farms were in serious trouble at the beginning of 1986. The Department of Agriculture considers a farm to be financially distressed if its debt/asset ratio exceeds .40 and it cannot generate sufficient cash to pay its bills. A comparison of Chart 5-3 with Chart 5-2 shows that much of the money spent on Federal agricultural programs does not go to distressed farmers, partly because many farms are not eligible for commodity programs. Even though the participation rate among farms eligible for commodity programs was very high in 1986, only about 30 percent of all farms had access to direct government payments. Financial stress is concentrated among family-size commercial farms; farms with sales between $40,000 and $250,000 represent about 25 percent of the total number of farms, but include in their numbers more than 50 percent of all financially stressed farms.

The benefits received by farmers include not only the government outlays for agricultural programs, but also the gains from higher prices that are the result of government policies. Such policies, even if they do not entail government outlays, impose extra costs on consumers and taxpayers that exceed the amount of income transferred.

Chart 5-3

Distribution of Financially Distressed Farms by Sales Class

January 1, 1986




Note.—Financially distressed farms are defined as those with debt/asset ratio over 40 percent and negative cash flow.

Source: Department of Agriculture.

The higher prices result from price supports, acreage reduction programs, or trade barriers.

The benefits to farms are directly tied to output. Taxpayer transfers are specifically tied to the acreage base of each farmer. The larger the stream of future subsidies, the higher the value of land. This feature of government programs increases the cost of production and makes the United States less competitive relative to other exporting countries.

Table 5-2 summarizes estimates of the consumer and taxpayer costs and producer gains from the major commodity programs. In most instances, economic resources are wasted because producer gains are less than the sum of losses to consumers and taxpayers. Most of these estimates assume U.S. policies do not affect world prices, when in fact the United States is an influential agricultural producer and consumer whose public policies can affect world prices. For example, U.S. sugar policies have such a large influence on world prices that Table 5-2 includes estimates of the costs and gains, taking account of

such changes. If U.S. sugar prices were determined by a free market, the world price would rise; thus, producer gains and consumer losses would be lower because the gap between the internal and world price would be narrower.

TABLE 5–2.—*Annual gains and losses from income-support programs under the 1985 Food Security Act and trade restrictions*

[Billions of dollars]

| Commodity | Consumer loss | Taxpayer cost[1] | Producer gain | Net loss |
|---|---|---|---|---|
| Corn | 0.5 - 1.1 | 10.5 | 10.4 - 10.9 | 0.6 - 0.7 |
| Sugar I[3] | 1.8 - 2.5 | 0 | 1.5 - 1.7 | .3 - .7 |
| Sugar II[3] | 1.1 - 1.8 | 0 | 1.0 - 1.4 | .1 - .4 |
| Milk | 1.6 - 3.1 | 1.0 | 1.5 - 2.4 | 1.1 - 1.7 |
| Cotton | ([2]) | 2.1 | 1.2 - 1.6 | .5 - .9 |
| Wheat | .1 - .3 | 4.7 | 3.3 - 3.6 | 1.4 - 1.5 |
| Rice | .02 - .06 | 1.1 | .8 - 1.1 | .06 - .32 |
| Peanuts | .2 - .4 | 0 | .15 - .40 | .0 - .05 |
| Tobacco | .4 - .7 | .1 | .1 - .2 | .4 - .6 |

[1] Includes CCC expenses after cost recovery.
[2] Less than $50 million.
[3] Case I assumes U.S. policies do not affect world sugar prices. Case II takes into account the fact that U.S. policies reduce world sugar prices. The value of sugar import restrictions to those exporters who have access to the U.S. market (that is, value of quota rents) is $250 million.

Note.—All figures reflect Gramm-Rudman-Hollings.

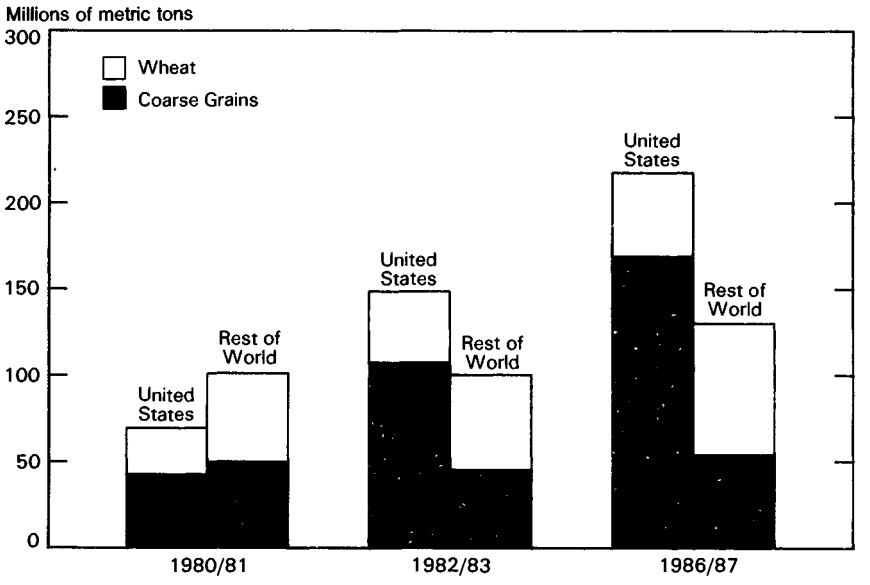
Source: Compiled by the Council of Economic Advisers from various sources.

Given the incentives provided by agricultural policy in the United States, it is no surprise that surpluses have become burdensome. At the beginning of the 1981–82 crop year, the world's wheat exporters held 49.5 million metric tons of wheat stocks, of which the United States held more than half. At the end of the 1985–86 year, stocks of the major world wheat exporters were estimated to be 83.2 million tons, of which the United States held 62 percent (Chart 5–4) or the equivalent of about 2 years of domestic consumption. Of the amount stored in the United States, most was held by the government (32.6 million tons). For coarse grains, at the end of 1986–87, it is estimated that U.S. stocks, which will be about 76 percent of world stocks, will represent approximately 1 year's domestic consumption and almost four times the amount of U.S. exports of coarse grains in any given year.

The overcapacity that exists and the chronic surpluses of major commodities continue to be sources of bad news for the future of American agriculture. During the 1980s, world stocks of sugar have risen 45 percent; world butter stocks have soared to a massive 2.1 million metric tons, which is approximately 33 percent of annual consumption, and prices have fallen by 50 percent; stocks of beef within the EC have risen to more than 30 percent of total world trade.

Chart 5-4

Carryover Stocks of Coarse Grains and Wheat




Note.—Data are for crop years; 1986/87 data are preliminary estimates.
Source: Department of Agriculture.

Within the United States, overcapacity is in the neighborhood of one-third of recent annual production of corn, wheat, and rice; and in 1985 overcapacity in the dairy industry was approximately 10 percent of total milk production.

PROMISING DEVELOPMENTS

Several developments engender hope that the current overcapacity in the U.S. agricultural sector may begin to ease. The Tax Reform Act of 1986 eliminated or severely curtailed many of the tax shelter features that led to an overcommitment of resources in agriculture. Special tax rates for capital gains have been eliminated, so the capital gain benefits for breeding and dairy livestock no longer will apply. Opportunities provided by cash accounting have also been restricted. Farmers will be able to deduct the costs of prepaid feed, seed, fertilizer, and similar supplies when they are purchased only to the extent that they are 50 percent or less of total farm expenses; those exceeding 50 percent will have to be deducted when used. In addition, only those involved in farming on a regular, continuous, and substantial basis can now use farm losses to offset wage and salary income.

Growth in the use of many inputs has fallen significantly. Investment in machinery and structures has been below replacement levels since 1981 and thus should act to curtail capacity. The demand for new credit, which already has declined approximately 20 percent, should continue to slow as farmers pursue cost-cutting strategies. The dramatic drop in energy prices will offer farmers large savings in production costs. Furthermore, the changes in how government deficiency payments are computed should lead to reduced output.

The declines in interest and exchange rates have begun to improve the outlook for the U.S. agricultural sector. Because farming is extremely capital intensive and debt-to-asset ratios have risen steeply, movements in real interest rates have significant effects on the cost structure facing agricultural production. In 1985, interest accounted for 16 percent of farm production expenses, excluding depreciation. Storable commodity prices are particularly sensitive to changes in interest rates; for nonstorable commodities (for example, cattle and hogs), breeding stocks are interest-rate sensitive.

The downturn in outstanding farm debt that began in 1983 continued through 1986. The large drop in interest rates during 1986 ultimately should offer improved returns to farming by eliminating several billion dollars of interest expense. The fall in production expenses is expected to boost net cash income about 14 percent in 1987 over 1986.

From a longer term perspective, existing overcapacity in the U.S. agricultural sector today can be altered by increases in demand or by the introduction of new cost-reducing technologies. Unfortunately, relief from current surplus conditions is unlikely to come from a growth in U.S. demand for food. Over the past quarter of a century, there has been no appreciable growth in per capita U.S. food consumption. On the other hand, U.S. agricultural productivity has been growing at a significant rate. The divergence between these two trends highlights the need to find markets for U.S. agricultural output beyond U.S. borders, or else experience further shrinkage of the farm sector. Fortunately, the rather steady growth in foreign food markets since 1960 provides a major outlet for U.S. excess supply.

One major source of world trade growth is the developing countries. Developing countries' effective demand for food has significantly outpaced their growth in food production. The result is large increases in trade; for example, during the period 1961–80, the 29 developing countries with the fastest growth rates in staple food production increased net imports of staple foods 3½-fold. Between 1970 and 1980, less developed country (LDC) net grain imports increased from 18 million to 53 million tons. Unlike the EC and centrally planned countries, LDC imports have continued to grow in the

1980s, reaching 68 million tons in 1984. Even though growth has stagnated over the past few years, the developing countries still remain the major potential growth market for U.S. exports.

Foreign economic growth rates are likely to increase over the next several years because of improved macroeconomic and financial conditions. Expanding incomes and global trade, declining inflation, and lower interest rates are providing the basis for recovery in purchasing power. Moreover, the world will add another 80 million people per year in the late 1980s. As a result, the growth rate of foreign demand for agricultural products could more than double the early 1980s' rate of 1 to 1.5 percent per year.

To enhance their rate of growth, LDCs must be encouraged to implement effective strategies, including those that improve the performance of their own agricultural sectors. Recent studies have demonstrated that such policies do not lead to reduced export demand for U.S. agricultural products. On the contrary, by fueling domestic growth and increasing rural income, many developing countries become better customers for some agricultural products that only the United States and other developed countries can provide.

Another promising development is on the emerging technology front. The United States is at the threshold of a revolution in biotechnology and genetic engineering. This revolution has the potential to increase agricultural productivity and reduce unit cost of production to levels that will significantly enhance U.S. trade competitiveness. The expected technological advances will result in some painful adjustments that, when completed, should eliminate the overcapacity that exists within the industry, provided that market signals are not distorted by government policies.

In addition, more intensive use of resources, more effective management, and regional shifts in production patterns could, under the right circumstances, expand the production of agricultural products within the United States. These potential changes have led to a 2.4 percent productivity growth rate forecast for U.S. agriculture as a whole, which is significantly above the rate of growth for the sector since 1950. Countries that allow market incentives to operate and that effectively manage commercialization of biotechnology and genetic engineering are expected to lower their costs of production and reap substantial benefits as a result of their greater international competitiveness.

Conditions may now be in place for an eventual economic and financial recovery of the U.S. agricultural sector. Nevertheless, the painful adjustment process currently underway will continue. Given appropriate reforms in government policies, these adjustments will eventually lead to a lower cost structure for the sector, fewer farmers,

ultimately higher incomes per farmer, and an improved financial structure for American agriculture.

## GLOBAL DISTORTIONS IN AGRICULTURE

Not only has the United States subsidized its agricultural sector, but other developed countries have also pursued similar strategies. Until the Food Security Act of 1985, however, one major difference existed because of high and inflexible price supports within the United States: U.S. commodity programs frequently encouraged farmers to turn their commodities over to the government. As a result, much of this supply became locked up in public stocks and did not enter the export market. Some countries, using the high U.S. price as an umbrella, promoted expansion of production and exports that would be otherwise unprofitable. Accordingly, U.S. agricultural exports fell from their 1981 peak of more than $43 billion to a level of $26 billion in 1986.

In fact, the net agricultural trade balance for the United States was negative for several months during 1986. Although this fact may be surprising, especially in light of the recent decline in the foreign exchange value of the dollar, several reasons contributed to this deficit. The dollar fell against major currencies, but not against the currencies of major agricultural exporters such as Argentina, Australia, Brazil, and Canada. Also, the recession of the early 1980s, from which many Third World countries have still not recovered, reduced economic growth abroad. Large harvests in a number of countries (e.g., Soviet Union) also played an important role. And because the Food Security Act of 1985 dramatically lowered price supports from one crop year to another (1985 to 1986), major importers during the first half of 1986 had no incentive to purchase supplies from the United States until new dollar price supports took effect. For example, at the end of July 1986, cotton was priced in the United States at approximately 64 cents per pound; at the beginning of the new crop year, August 1, cotton cost about 31 cents.

But the fundamental difficulty behind U.S. export performance is pervasive government intervention in domestic agricultural markets. World agricultural markets have been distorted by government policies in both the developed and the developing world. Policies in some industrial countries support and protect domestic farmers and shrink potential import markets. Sometimes the policies are so drastic as to turn net importers into net exporters. A dramatic rise in the yen against the dollar will have little impact on U.S. agricultural exports to Japan if trade barriers restrict the flow of such goods, regardless of price.

As a general rule, developed countries raise farm prices above market levels through policies that lead to an overcommitment of resources to agriculture. On the other hand, developing countries have taxed the agricultural sector, forcing prices below levels that would be generated by the market, often causing local shortages. Thus, developed countries are pushed toward a net export position and developing countries toward a net import position—regardless of underlying comparative advantages.

In the industrialized world, governments generally increase the size and scope of the agricultural sector. Often the underlying goal of industrialized countries is to raise farm income, which is achieved through schemes that protect their small but sacred agricultural sector against foreign competition. For example, Japan protects its inefficient rice producers through trade barriers, the EC protects almost all of its farmers, and the United States shields components of its agricultural sector from import competition and assists its exports through subsidization (Table 5–3).

TABLE 5–3.—*Sources of producer support equivalents for selected countries and major commodities, 1982–84*

| Commodity | Japan | European Community | United States |
|---|---|---|---|
| Grains | State trading | Price supports maintained by intervention purchases<br>Variable levy<br>Export refunds | Deficiency payments<br>PIK entitlements<br>CCC inventory operations and commodity loans |
| Oilseeds | Deficiency payments | Deficiency payments | CCC inventory operations and commodity loans |
| Dairy | Price supports through government stockholding and trade barriers<br>Some deficiency payments | Price supports maintained by intervention purchases<br>Variable import levies<br>Export refunds | Price supports maintained by tariffs, quotas, and government purchases |
| Livestock | Beef:<br>Quotas<br>Tariff<br>Domestic price stabilization<br>Pork:<br>Variable levy<br>Poultry:<br>Tariff | Price supports maintained by intervention purchases<br>Variable import levies<br>Export refunds | Beef:<br>Tariff<br>Other:<br>General (research and development, inspection, etc.) |
| Sugar | Price stabilization<br>Import levy | Price supports maintained by intervention purchases<br>Variable import levies<br>Export refunds<br>Production quotas | Price supports<br>Import quotas |

Source: Department of Agriculture, Economic Research Service.

The cost of the "common agricultural policies" in the EC is enormous, with about the same budgetary costs as in the United States. The direct subsidy cost of the EC agricultural policy during 1986 is estimated to have been $23 billion, with as much as $3 billion spent

on surplus disposal. Taxpayers and consumers together subsidized farmers in the EC by up to $40 billion a year during 1984. This subsidy is now significantly higher. In Japan, which has about half the GNP of the United States or the EC, taxpayers subsidized farmers by $10.5 billion in 1985, but as consumers they paid many orders of magnitude above this amount. Japanese consumers pay food prices that are estimated to be around 60 percent higher than would be the case if the fall in world prices and the yen appreciation since 1980 had been reflected in internal agricultural prices.

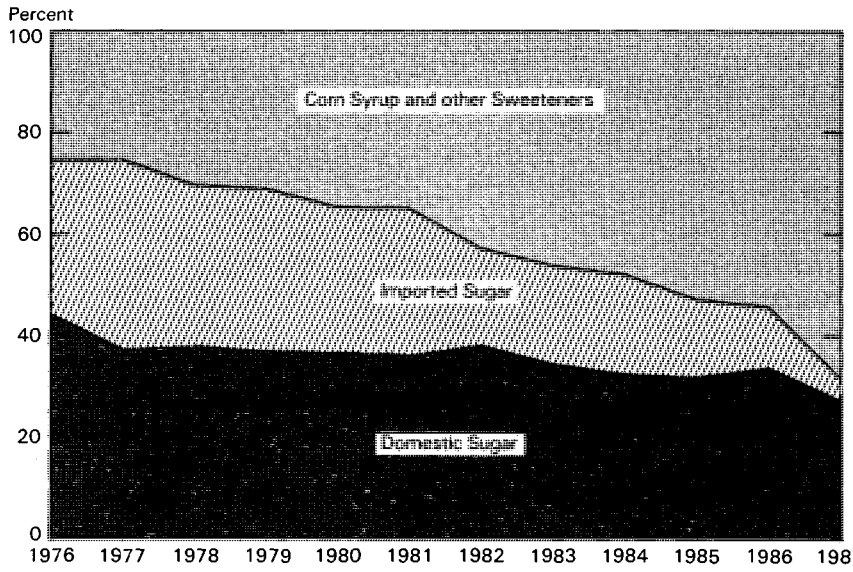
For the early 1980s, a recent World Bank study found that if all the subsidies and protectionism throughout the industrialized world were removed, taxpayers and consumers would save $100 billion a year, while farmer incomes would fall slightly more than $50 billion. For 20 or so developed countries, current taxpayer and consumer costs are in the neighborhood of $150 billion per year.

Government price supports give rise to incentives to import those goods, potentially displacing the farmers the government seeks to help. Thus, governments have two choices: introduce barriers to trade, or purchase domestic and imported supplies until the world market price is bid up to the internal level. Because the latter policy would require extraordinary government outlays, most governments impose trade restrictions that involve no budgetary expenditures but impose losses on consumers. With few exceptions, trade restrictions instituted through border measures are in place solely to validate domestic farm programs. Hence, a country's agricultural trade policy is derived largely from its domestic support programs.

Import quotas are quite common because they are more binding in their protection. A classic example is the import quota that the United States imposed recently to maintain internal price supports for sugar at three to four times the world price. As the differential between internal sugar and world prices has increased, the import quota has become more binding, as shown in Chart 5–5. Sugar imports have fallen dramatically, while use of a major substitute, corn sweeteners, has increased significantly because of the high internal prices of sugar. The high price not only makes the production of substitutes more profitable, but induces consumers to switch consumption away from expensive sugar. Furthermore, protection for sugar has led to protection for other goods. In 1985, the United States put quotas on processed goods that contain sugar (e.g., cakes and pancake mixes) because sugar quotas encouraged their import. The large gap between the U. S. and the world price of sugar even made it profitable to extract the sugar from these goods and sell it in the United States.

Chart 5-5

Shares of Total U.S. Consumption of Sweeteners




Note.—Data are for crop years; 1986-87 are preliminary estimates.
Source: Department of Agriculture.

Protection in the industrial countries has, to some extent, prevented the developing world from sending more agricultural products abroad. This result, combined with the export subsidies used to dispose of surplus production, has allowed the export share of industrial countries to rise from about 42 percent in the early 1960s to about 63 percent in the mid-1980s.

By contrast, agricultural policies in developing countries are, in general, biased against the agricultural sector, regardless of the country's net export or import position. Government interventions tend to shift resources out of agriculture by lowering its profitability relative to industry and manufacturing. Because of the large size of the agricultural sector compared with other sectors in many developing country economies, agriculture is taxed heavily to raise government revenue. Export taxes in the range of 50 to 75 percent are not unusual. This taxation reduces the country's exports and market share in world trade.

One way to quantify the effect of government policies on agriculture in developed and developing countries is to compare producer

subsidy equivalent levels and consumer subsidy equivalent levels. These ratios indicate the net effect of government policies on producer and consumer incentives. Producer subsidy equivalents measure, as a percent of crop revenues, the value to producers of trade and domestic policies. The most recent producer subsidy equivalents (1982–84) indicate clearly that all developed countries subsidize their agricultural producers. Across all commodities, the weighted producer subsidy equivalents (in percentage terms) for some of the major industrial countries over the period 1982–84 are as follows: Japan, 70; EC, 41; U.S., 22; Canada, 24; and Australia, 6. In 1986, these figures for all countries have increased, especially the U.S. subsidy equivalents. In the case of wheat, beef, and dairy, the cost of producer support is borne mainly by consumers in the EC and Japan, while the United States and other developed countries use budget contributions (except in dairy or sugar support) to assist producers (Table 5–4).

TABLE 5–4.—*Who bore the cost of support to producers, 1982–84*

[Percent of producer support]

| Country/Region | Commodity | | |
|---|---|---|---|
| | Wheat | Beef | Dairy |
| European Community | | | |
| Borne by consumers | 67 | 92 | 77 |
| Budget contribution | 34 | 8 | 23 |
| Japan | | | |
| Borne by consumers | 63 | 76 | 58 |
| Budget contribution | 37 | 24 | 42 |
| United States | | | |
| Borne by consumers | 29 | 42 | 95 |
| Budget contribution | 71 | 58 | 5 |

Note.—Data are for crop years.

Sources: Department of Agriculture (Economic Research Service) and Council of Economic Advisers.

Consumer subsidy equivalents measure the value, as a percent of consumer costs, of government policies to consumers, with negative figures indicating consumer taxation. Consumer subsidy equivalents show that developed countries tax consumers almost uniformly across commodities. For example, these equivalents for beef, pork, and poultry are around −5 for the United States and range between −1 and −25 for the EC. The developing countries are divided again: East Asian newly industrialized countries generally tax consumers, whereas some countries such as India, Argentina, and Nigeria often subsidize consumers.

The importance of the disincentives inflicted upon agriculture in LDCs can best be dramatized when those disincentives are removed. After two decades of sluggish growth, agricultural output in the Peo-

ples Republic of China has soared since 1978, when regulations were liberalized and prices were allowed to rise and approach market-determined levels. This remarkable expansion, making China now the largest wheat producer in the world, was achieved almost entirely through productivity gains. The amount of land (including irrigated) under cultivation and the use of tractors for farming declined between 1978 and 1983; the major change was the incentive system.

Nations that have not liberalized their agricultural policies, particularly those in Africa, have suffered from food shortages and even widespread malnutrition and famine. When the enormous surpluses of the developed economies are juxtaposed with the situation of poorer LDCs, the world agricultural imbalance seems particularly galling. The problem is not one of agricultural supply, however, but one of allocation. The poorer countries are not underfed because they need more agricultural production, but because they lack the income to buy more food on world markets. By liberalizing their agricultural policies and allowing market incentives to motivate their farmers, poorer LDCs can not only increase domestic production in products for which they have comparative advantage, but they can also increase rural incomes so they may trade for the foodstuffs essential for a healthy populace.

## INTERNATIONAL COSTS OF AGRICULTURAL POLICIES

Even though agricultural policies may be aimed at domestic concerns, their effects spill over to the rest of the world. For example, the distorted price incentives in industrialized countries stimulate production that directly or indirectly depresses world prices. The depressive effect is particularly pronounced when a government subsidizes the sale of stocks on the world market, makes concessional sales, or simply donates the food as aid.

Sugar is a glaring example of the international cost of industrialized country policies. The EC and the United States have both guaranteed high prices for domestic sugar producers, which has led to growing domestic production. The EC sugar program turned the Common Market from a net importer to a net exporter in 1977. The United States, under its current sugar policy, may make the same change soon. The U.S. and EC sugar policies have placed great burdens of adjustment on many developing countries. These sugar policies have not only eliminated a major importing market for countries whose climate is more naturally suited for sugar production, but also promise to make the EC and the United States export competitors. One study estimates that industrialized countries' sugar policies cost the developing countries about $7.4 billion in lost export revenue during 1983, reduced their real income by about $2.1 billion, and in-

creased price instability in the residual world market for sugar by approximately 25 percent. The list of sugar-producing countries that suffer from these policies almost coincides with the list of countries and regions that are of utmost interest to American policymakers, e.g., Philippines, Brazil, and Central America.

In essence, by expanding output and depressing domestic demand, the agricultural protectionist policies of industrialized countries reduce world prices and distort the relative prices of agricultural versus other goods. Prices for the most highly protected products are depressed more than prices of other agricultural products. These distorted prices make the use of resources in world agriculture even less efficient. If Japan were to reduce its protection of the rice varieties in which other Asian countries have a comparative advantage, they—and Japan—could achieve greater efficiency and higher income. When farmers in the Netherlands produce vegetables in greenhouses because energy costs are subsidized, they indirectly discourage farmers in Mediterranean countries from pursuing their natural advantages in the production of these products.

Differential rates of subsidization also create particular difficulties for LDCs when the rate of support for processed agricultural products exceeds that for raw products. In industrialized countries, tariff and nontariff barriers tend to be higher on more processed forms of a particular good. As a result, escalating support of agri-processing severely disrupts economic development by blocking the most natural step toward industrialization. Such policies have resulted in industrialized countries exporting larger quantities and importing smaller quantities of processed products than of related raw materials. For example, the EC accounts for 11.4 percent of world wheat exports, but 48.9 percent of wheat flour exports. Developing countries often respond to such policies by subsidizing local processing industries, which inevitably encourages further inefficiencies and compounds the direct harm arising from industrial countries' tariffs.

Any one country's competitiveness depends not only on its own efficiency but also on the political decisions of other countries. The returns to a country from the world market may be undermined by increased direct and indirect subsidies. For example, high target prices for U.S. rice coupled with marketing loans have resulted in large U.S. exports imposing significant costs on Thailand, a major rice exporter. The same basic policies for cotton have generated similar, although not as dramatic, effects for Egypt, Bangledesh, Mexico, Guatemala, Paraguay, and other cotton-exporting countries.

During the policy debates on the Food Security Act of 1985, supporters of the legislation emphasized the dependence of the U.S. agricultural sector on foreign markets. The general view was that exports led to the boom of the 1970s and the bust of the early 1980s. As a result, if American agriculture were to escape its plight, exports would have to lead the way once again. Unfortunately, the length of time before lower price supports would improve U.S. agricultural export performance was underestimated.

The effectiveness of the new policy in enhancing exports of U.S. agriculture depends critically upon the responsiveness of export demand to price. The evidence shows that the short-run responsiveness of export demand for many commodities from the United States is relatively weak. As a result, increases in export volume will lead to lower total values of exports in the short run because the fall in prices will be sharp enough to offset the increase in volume sold. Over the longer run, 3 to 5 years in the case of many commodities, lower prices can be expected to drive inefficient producers out of the market, force some government policy changes, and stimulate greater consumption, thereby increasing export sales at higher prices.

Exports of agricultural products depend heavily on government behavior throughout the industrialized world. Only if protectionist policies are curbed will it be possible to increase demand for farm products from those countries that have comparative advantages. Certainly over the next few years, major competitors of the United States can be expected to make some adjustments in their production. However, if total market demand increases only moderately in response to declining market prices and slow growth in foreign income, any significant increase in either the U.S. share of world trade or in the volume of exports is unlikely. Some increase in share and some gain in volume might occur, of course, but they may not correspond to the dramatic reduction in U.S. price support levels. The current protectionist policies that are pursued throughout the world, the large overcapacity in place, and the worldwide market fragmentation will serve to limit growth of U.S. exports over the balance of the 1980s.

## REFORM OF U.S. AGRICULTURAL POLICY

The Food Security Act of 1985 and its predecessors have helped to create many new problems that afflict the U.S. agricultural sector, and have failed adequately to solve many old problems. The fundamental flaw is that Federal farm subsidy payments are linked directly to farm production. Because farmers are paid subsidies (explicit or implicit) that are proportional to their output, they are encour-

aged to produce even more. Excess production must either be stockpiled by the government, dumped on world markets, or restrained through inefficient land or production restrictions.

To the extent that price supports are above market-clearing prices, government stocks accumulate while exports fall. This design has also contributed to instability and uncertainty on private markets. For example, government management of commodity generic certificates can exacerbate the volatility of wheat and corn markets. If no further generic certificates are released, the market will expect corn and wheat prices to rise above current loan rates, because most stocks will be held in government hands rather than by the private sector. In contrast, if the Department of Agriculture releases a large number of generic certificates, market prices will fall below the loan rates.

Two of the major features of the Food Security Act of 1985 are the high target prices and the relationship between government income-support payments and production decisions. Under the act, target prices are set at high levels and are not permitted to decline until 1988 for feedgrains and wheat and 1987 for cotton and rice; furthermore, the scheduled reductions in target prices are far too small (2, 3, and 5 percent, respectively, for the years 1988, 1989, and 1990 in the case of feedgrains and wheat). The limited decoupling of government income payments and production decisions provided by the 50-92 provision is insufficient. This small step in the direction of decoupling is not expected to have any major effect on the current chronic surpluses and overcapacity within the sector.

The Administration seeks major revisions in the 1985 act in order to reduce budget exposure, provide fairness, restore a sense of proportion to agricultural policy, attempt to set loan rates at or below market-clearing levels, and move more meaningfully in the direction of decoupling production from payments. Specifically, the Administration proposes to extend the 50–92 provision to a 0–92 provision; administratively and legislatively tighten the definition of a "person" for purposes of the payment limitations; limit the total payments to $50,000 per person; reduce target prices from 1987 by 10 percent per year through 1990; and provide more flexibility in establishing loan rates for program crops.

Under the 0–92 provision, farmers would receive payments based on historical acreage, without being required to plant the program crop on those acres. To ease the adjustment from chronic surpluses, any land that might be idled under this provision could not be used to produce any other crop. Hence, this provision does not allow total decoupling of program payments and farmer production decisions. The proposed revision simply means that participating farmers can collect 92 percent of what their income subsidies would be under full

production, even though all of their land is idle. Current law requires that at least half of their land be planted.

The proposed $50,000-per-person payment limitation pertains to deficiency and land diversion payments, as well as to marketing loan payments in the case of cotton and rice, and loan deficiency payments for other program crops. Under current law, the 1987 limit is $250,000. Tightening the definition of a person will achieve consistency and fairness in the application of payment limitations by closing loopholes that circumvent current legislative intent. The current loose definition of "person" has fostered a proliferation of overlapping partnerships and other farm reconstitutions in order to qualify for multiple payment limits.

The proposed reduction in target prices is expected to lead to a decline in agricultural program outlays by $13 billion over fiscal 1988 through 1990. This action would reduce the current incentive to overproduce and also contribute to reductions in the budget deficit.

If loan rates are above market prices, incentives will still remain to plant for the government and not the market. Thus, an important step in decoupling is to reduce loan rates to below market prices. Under the proposed revisions, the Secretary of Agriculture could reduce loan rates by up to 10 percent per year. Current law establishes loan rates by formula (75 percent of 5-year moving average, dropping the high and low price), but superimposes a limit on how fast annual adjustments can be made to the computed formula loan rate. The current limit is 5 percent, after a special provision of 20 percent for some commodities. The proposed revision would allow U.S. prices to be more competitive, reduce incentives to produce for the loan rate itself, and make the decoupling more effective.

Because the program for crop year 1987 has been largely determined, many of the revisions can be adopted only for years 1988 through 1990. The 0-92 decoupling provision could, however, be instituted immediately. The proposed revisions for the past 3 years of the current legislation would provide an effective transition to a more comprehensive and coherent agricultural policy.

The Administration also proposes changes in the U.S. sugar program to deal with the distortions generated by current policy. The proposed reform would lower the price-support loan rate to 12 cents a pound while providing transition payments to cane and beet producers over a 4-year period. Prices paid by domestic sugar consumers will fall as a result. By modifying the incentives that distort domestic production and consumption, U.S. sugar policy moves slowly toward a more market-oriented position.

The cornerstone of any comprehensive reform of agricultural policy is the elimination of incentives to produce for government programs rather than for the market. As long as such incentives exist, surpluses will be generated. As a consequence, the government will attempt to manage supply by acreage reduction programs, voluntary diversion, acreage set-asides, or production quotas.

Given the changes that have occurred within agriculture, the supply management bias of current programs is doomed to failure. The sector's capacity to produce under the stimulus of favorable economic conditions and large government subsidies is extremely high. As a result, the cost of agricultural commodity policies that attempt to restrain production and enhance prices through land controls are in short, toweringly expensive. Moreover, a program attempting to limit supply by renting land from farmers, by outright purchases of farm commodities, or by mandatory supply controls cannot avoid directing its benefits to the largest producers. For a given supply reduction, most of the idled land or the eliminated production must come from the 15 to 20 percent of all producers who account for approximately two-thirds of total production.

Attempts to limit supply fail to exploit the continued growth in world food markets. Although increases in the acreage reduction and the voluntary diversion programs can provide some short-term assistance in reducing current chronic surpluses, this benefit can only be achieved by incurring other costs. These other costs include the losses imposed upon consumers, the reduction in markets for the farm supply industry, and the increase in costs for food processing and distribution. Moreover, acreage controls result in the excessive use of other inputs, which partially offsets the desired production cutback. Such programs are not cost-effective in terms of government outlays.

Mandatory acreage controls could be more effective than current voluntary programs in managing the total amount of land allocated to a particular crop but at a high social cost. Recent Department of Agriculture studies show that a 125-million-acre reduction in cropland would be required to raise commodity prices 30 to 40 percent. This program would discourage domestic use, cut exports sharply, devastate the farm supply industry, raise costs for the entire food processing and distribution chain, and impose huge losses on U.S. consumers. This option applied to feedgrains would reduce earnings for livestock producers throughout the United States. Exports of farm commodities could be expected to fall 40 percent. This mandatory control program would reduce GNP by $64 billion and eliminate approximately 2.2 million jobs, a number almost equal to all the

farmers in the United States. The greatest impact would fall on the poor, who spend the largest portion of their income on food. Moreover, in comparison with current programs, the concentration of benefits among large producers would be even greater, with no effective payment limitation.

Subsidies could be offered to counteract some of the adverse effects, such as those on the U.S. livestock industry and on export sales. Such subsidies, however, would drive the cost of the mandatory acreage control program above even the high costs that were incurred during fiscal 1986.

All attempts to limit production will impede the international competitiveness of the U.S. agricultural sector, both in cost and output. In acreage reduction programs, for example, farmers must retire a certain fraction of their acreage base, e.g., 20 percent in the case of corn, to receive deficiency payments. Thus, every firm in the industry is asked to spread its total fixed cost over 80 percent of its potential output. This scheme raises the average cost of production, relative to competitors who suffer from no such constraints. Moreover, supply management policies create an artificial scarcity of farmland, bidding up its price to a higher level than otherwise would have occurred.

Finally, limiting output places the United States in the position of being the residual supplier to world commodity markets. Whatever growth occurs in world food markets is allowed to be tapped by major competitors. Moreover, the supply management bias of agricultural programs in the United States lowers the costs to other countries of subsidizing their agricultural sectors. As a result, U.S. programs operate to improve the position of major competitors in terms of both their access to major markets and the cost of their agricultural policies.

## A COHERENT LONG-TERM AGRICULTURAL POLICY

A comprehensive policy to foster and maintain a vital and progressive U.S. agricultural sector would contain four major components: complete decoupling, targeting, resource conservation, and negotiation and trade cooperation.

### *Complete Decoupling*

Under complete decoupling, payments to farmers would not be linked to current production either through subsidies or artificially high prices. Production decisions would be based on economic incentives, not governmental policy. Set-asides and acreage reduction programs could be phased out over a specified period of time. Distortions such as intensive use of inputs would diminish, and budgetary outlays would largely be known in advance.

Decoupling could be phased in by allowing increasing discretion with regard to the use of idle land. For example, after a period of time in which idle land could not be used for any other crop, 20 percent of the land could be planted in any crop, then 40 percent, and finally 100 percent. Income support could also be decoupled from prices. Farmers should receive a known payment regardless of what they plant and the market price they receive. The income support that has been decoupled from production and prices should be phased out.

*Targeting*

Separating payments from production and prices would make it possible to target such transfers so as to preserve the family farm and rural communities while protecting the rural landscape. Targeted income-deficiency payments would preserve some farms unable to manage the riskiness of their operations, and would ease the costs of labor adjustment from agriculture for other farmers. Income supports targeted at those who rely more heavily on farm income and yet do not have the immediate resources for retraining, job searching, etc., would ease the inevitable pain of change and improve the long-term flexibility of U.S. agriculture.

Targeted farmers should receive income supports unconditionally. Farmers could then employ their support in whatever fashion they considered most appropriate—from retraining to remaining in farming. One possible method of targeting would be to have payments based on current acreage and historic yields with a limit to the qualifying farm size.

*Resource Conservation*

One feature of the Food Security Act of 1985 that is in the long-run interest of the United States is the provision for placing highly erodible land in the conservation reserve. Under the 1985 legislation, lands that pose significant off-farm environmental threats—for example, water quality damage—can also be included in the conservation reserve program. It is the largest conservation program in the history of Federal agricultural policy, calling for the voluntary, gradual enrollment of 40 million to 45 million acres of land. Under this program, landowners agree not to produce on qualifying cropland for 10 years in exchange for an annual rental payment. Unfortunately, this program is hampered by competing supply management programs. In essence, the government is bidding against itself to idle farmland. Currently, most farmers are better off collecting deficiency payments or diversion payments for idling acreage under commodity programs

than by idling land on a long-term basis under the conservation reserve program.

Over the period that supply constraints are being phased out, difficulties stemming from the concurrent operation of the conservation reserve program and the price-support programs must be resolved. The joint operation could be effectively managed by the introduction of a land-targeting scheme. Lands declared eligible for the conservation reserve program would be declared ineligible for the acreage reduction program.

A redesigned conservation reserve program, combined with decoupled and targeted income support, would reduce incentives for intensive land use that arise when farmers seek to increase their immediate cash incomes. Finally and most significantly, the elimination of commodity programs that connect income supports to production levels would ease the extensive and intensive use of land and other resources in production. The significant reductions in the use of pesticides and other chemical inputs resulting from these program changes would also reduce environmental damage.

*Negotiation and Trade Cooperation*

The current state of agricultural trade can be described as one in which many countries feel trapped. If any country reduces its export subsidies or limits its farm support, it will lose market share. Its own action will rarely be sufficient to induce a significant rise in world prices. Thus, the rewards to individual countries from unilateral agricultural policy reform often seem too little to encourage change.

Simultaneous action by many countries might break this trap. The Administration began a coordinated move to raise the issue of agricultural protectionism at the last economic summit. How to achieve multilateral, systematic rationalization of policies across sovereign states with different resource endowments and policy mechanisms, if not policy objectives, remains a major challenge.

The difficulty of international cooperation in adjustments, however, does not excuse delay in U.S. policy reform. Reform is in the self-interest of the United States and should be initiated regardless of whether trading partners act as well. In addition, the reformed policies would eventually stimulate other protectionist countries to make similar adjustments.

Although sound economic grounds exist for greater market orientation even with no action by other countries, the chances of significantly reducing the degree of protection provided to U.S. agriculture are far better if coordinated moves also occur in other major agricultural exporting countries. The political feasibility of implementing decoupled and targeted deficiency payments is greatly enhanced if other industrialized countries would pursue similar actions.

A cooperative effort of major agricultural exporting countries could involve coordinated and lockstep moves in decoupling. The possibility of such cooperative ventures is much higher in today's environment because of the huge subsidization under the Food Security Act of 1985. In contrast with the U.S. legislation governing the early 1980s, many exporting countries, including Australia, Canada, and Argentina, now have far more incentive to enter a cooperative effort to reduce worldwide protectionist trade policies.

## CONCLUSION

Today's highly complex patchwork of agricultural policies has become increasingly antiquated and unproductive. Agriculture and rural communities have become so vastly different in structure and in their relationships to the domestic and world economies that the premises underlying current policies are no longer valid. Besides costing taxpayers and consumers billions of dollars and representing a significant portion of the Federal deficit, agricultural policies divert land, labor, and other resources from more to less productive uses. The huge surpluses generated in the United States and throughout the world harm U.S. allies and less developed countries, while providing huge windfalls to powerful economic interest groups. These programs are unfair, with some individuals receiving millions of dollars from the government.

The policy reforms outlined here would correct the major imbalances that exist within U.S. agriculture. Other reforms are also needed. For example, some Federal marketing orders attempt to maintain or enhance commodity prices by restricting either the amount produced or the amount marketed. These market regulations tend to tax consumers in order to generate extra profits for established producers of the protected commodities. Such marketing orders should be deregulated. In contrast, marketing orders that focus on research, promotion, and providing timely information to producers and consumers should continue to be supported. The Farm Credit System faces huge losses and is currently unable to diversify the risk of its loan portfolio; it needs to be restructured. Federal and State governments must address problems such as depleted aquifers, groundwater contamination, water salinity, and the excessive use of irrigation water attributable to inappropriately administered prices. The challenge facing both the public and private sector is to invent the means for enhancing agricultural productivity while reducing the cost of environmental externalities.

To be sure, the Food Security Act of 1985 will not yield easily to a major overhaul. These policies, after all, are tied to a long series of

legislative precedents, deeply embedded goals and objectives, and the vested interests of powerful groups. Major opposition will doubtless arise to the reforms outlined here, which are in the best interest of the U.S. taxpayer and consumer. Reforming agriculture would lead to huge gains not only here in the United States but in the rest of the world.

CHAPTER 6

# Risk and Responsibility

RISK IS A FACT OF LIFE. Every person balances risks of accident and injury against the attainment of other goals, and trades off some kinds of hazards against others. Whether to smoke, take a particular job, travel by automobile or airplane, use a safety belt while driving, or engage in a dangerous recreational activity are all decisions that involve risk. People are subject to hazards from the actions of other individuals as well. Determination of the proper role of government with regard to personal risk is a complex and important public policy issue.

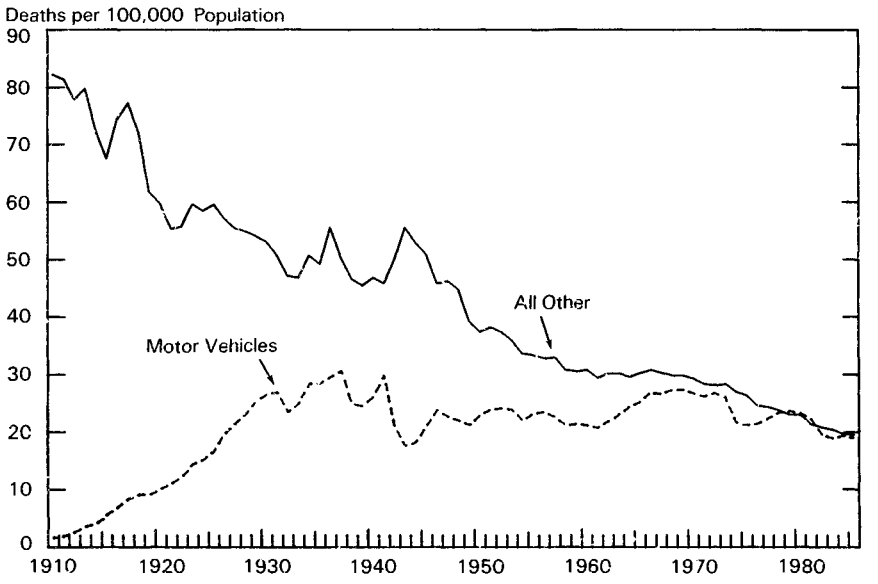
Health and safety have improved dramatically in the United States during the 20th century. Life expectancy at birth increased from 47.3 years in 1900 to 62.9 years in 1940 and, by 1983, had risen to 74.7 years. Much of this improvement is attributable to the decline in infant mortality, but adult life expectancy has also increased. In 1900, a 40-year old could expect to live to age 67.9. This expectation increased to 71 by 1940, and rose further to 77.2 by 1983. This represents a gain of 9.3 years, or a 33 percent increase in the expected number of years remaining at age 40.

Accident fatality rates have declined at the same time. Chart 6–1 shows annual fatality rates from motor vehicle and all other accidental causes. The rate from all causes other than motor vehicles dropped from 82.4 per hundred thousand population in 1910 to 20.9 in 1982. Motor vehicle deaths per hundred thousand population generally have been steady since the late 1930s. Automobile travel has increased substantially over this period, however, and traffic fatalities per hundred million vehicle miles have fallen almost 80 percent, from 10.89 in 1940 to 2.47 in 1985.

Both the home and workplace have become safer. The home accidental death rate per hundred thousand population decreased from 21.2 in 1948 to 8.6 in 1985. The accidental death rate at work has fallen by more than two-thirds since the 1930s (Chart 6–2). Work-related death rates differ across industries, and one cause of reductions in the overall rate has been the change in employment patterns as production has shifted from agriculture and other relatively danger-

Chart 6-1

Rates of Accidental Deaths by Cause




Sources: Public Health Service and National Safety Council.

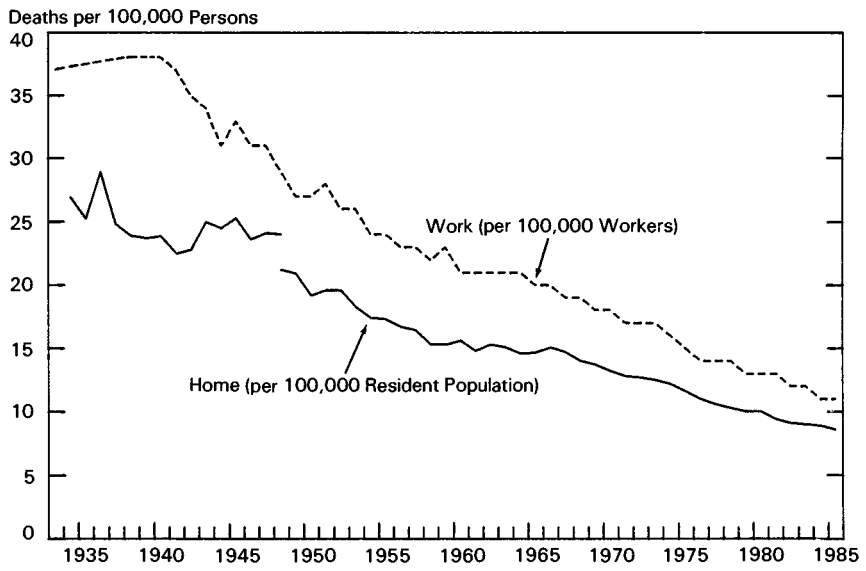
ous goods-producing industries to the relatively safer service industries.

The underlying source of these improvements in health and safety is economic growth and a rising standard of living. Higher incomes enable people to purchase better nutrition, clothing, and shelter as well as more and better medical care. A higher standard of living enables consumers to purchase safer products, safer forms of transportation (including safer automobiles), and safer living environments. Increased wealth supports improved public health measures, from vaccinations to water and sewage treatment. Economic progress has been a major factor leading to advances in science and medicine that have mitigated or eliminated many dread diseases and have improved the treatment of accident victims.

But accidents, injuries, and disease can never be avoided entirely. Individuals do not seek to avoid all risks, and the human lifespan cannot be extended without limit. Increases in health and safety often cannot be achieved without cost, and are only one way in which economic progress can be translated into greater well-being.

Chart 6-2

Rates of Home and Work Deaths Due to Accidents




Note.—A change in classification resulted in a break in the home accident series in 1948.
Source: National Safety Council.

## PROTECTION AGAINST RISK

Every individual can reduce risk by exercising personal care. If responsible adults voluntarily undertake risky activities, such as hang gliding, their choices must be respected in a society that values individual liberty and autonomy. This general principle of respecting personal choice is compatible, however, with governmental action to reduce risk in particular circumstances, especially when the actions of some increase the risks to others.

The institutional means for increasing safety and reducing risk are provided through three social arrangements—markets, the legal system, and government regulation. Markets create incentives for safe behavior and allow individual choice in decisions involving risk. Consumers can purchase reductions in risk directly by choosing safer products. Safety is a desirable product characteristic, like durability and energy efficiency. Companies that earn reputations for making unsafe products face retribution in the marketplace, just as if they charged excessive prices or offered shoddy goods. The market also

promotes safety in the workplace. All other things equal, employers must pay higher wages for riskier jobs, which creates an incentive to reduce occupational hazards.

Private insurance enables individuals and firms to protect themselves against the costs of various risks. Consumers purchase insurance against losses from death, illness and accidents, and some kinds of natural disasters. Manufacturers insure against product liability lawsuits, and professional practitioners insure against liability for malpractice. By spreading the costs of risk, insurance can also undermine incentives for safe behavior; but where premiums are closely linked to the likelihood of events insured against, safety incentives are substantially preserved.

Markets cannot entirely protect an individual from being harmed by the actions of others. The legal system, specifically tort law, provides victims the opportunity to be compensated. By transferring to those who cause harm the costs they impose on others, tort law creates incentives for individuals to behave responsibly.

## GOVERNMENT MANAGEMENT OF RISK

Government provides the legal and judicial framework for the market and tort systems, offers insurance against some risks, imposes regulatory standards, and operates programs to control risk directly. Government protects the integrity of the marketplace by prohibiting dissemination of false or fraudulent information by sellers. Government supports basic health research, and informs the public about health and safety characteristics of products.

Several circumstances may provide a rationale for government regulation. First, consumers may lack the information or the ability to assess particular risks accurately. Second, individuals or firms fail in some cases to take account of the costs of harm they impose on others. The tort system may not be able to force a person who causes harm to bear these costs if the person's wealth is insufficient to compensate the victim, the cost of using the tort system is too high, or the person who caused the harm cannot be identified. Third, if markets and the tort system cannot adequately control externalities such as those leading to environmental pollution, government regulation may be warranted. Government regulates risk and safety through agencies such as the National Highway Traffic Safety Administration (NHTSA), the Consumer Product Safety Commission (CPSC), the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA).

Regulatory policy encompasses both risk assessment (determination of the probabilities of harm) and risk management. Risk manage-

ment should reduce and not merely displace risk. If one dangerous product is banned, more harmful ones may be used. Substitutions of this sort can exchange known risks for unknown ones. Effective risk management assesses the relative benefits and costs of actions to reduce particular risks. The benefits of regulation include avoidance of deaths, injuries, and property damage, as well as saving resources that otherwise would be used to mitigate these adverse consequences. Costs of regulation include the resources, both public and private, that must be devoted to meeting regulatory standards, as well as reduced competition in some cases. Government regulation sometimes restricts freedom of individual choice by imposing common standards. Regulation may, in addition, retard innovation and investment, thus slowing economic growth.

If some regulations show a much lower cost per life saved or accident avoided than others, adoption of the more cost-effective ones would save more lives for a given level of risk-reduction costs. Regulatory actions with the highest expected net gains should be undertaken first, leading to consistency in cost-effectiveness across regulations. A policy of consistency should apply to all activities of government that affect risk: for example, statutes and regulations; Federal programs that directly affect safety, such as air traffic control and the oversight of aircraft maintenance; and State and local activities, such as highway construction and firefighting. Complete consistency, however, is neither attainable nor desirable. States determine their own regulatory policies in many areas, in accordance with principles of federalism. Special significance may be attached to reducing particular types of risks, such as those faced by children, or risks that are not assumed voluntarily.

Statutory language sometimes impedes the realization of consistency by setting goals that do not take account of costs. Examples are portions of the Clean Air Act, Clean Water Act, and Occupational Safety and Health Act, as well as the Delaney Clause of the Food, Drug, and Cosmetic Act. Agencies may also fail to promote consistency in their rulemaking by implicitly assigning widely differing values to saving a life. A recent study shows that the average cost per life saved varies across regulations from as little as $100,000 for NHTSA's 1967 steering column protection rule to $132 million for the Food and Drug Administration's 1979 ban on diethylstilbestrol (DES) in cattle feed. Some proposed regulations have even higher costs, such as EPA's proposed restrictions on the disposal of dioxins and solvents on land, estimated to cost $3.5 billion per life saved. The regulatory review and coordination process implemented by this Administration is designed to improve consistency across Federal regulations, to the extent permitted by law.

Regulatory review established under Executive Orders Nos. 12291 in 1981 and 12498 in 1985 is meant to ensure that regulations are worth their costs and that the most cost-effective regulatory activities are given priority. The oversight process is based on the principle that government regulations, when such interventions are appropriate, should maximize the net benefits to society. Where regulation is excessive, deregulation is indicated.

## PERSONAL RESPONSIBILITY

Individuals can mitigate or eliminate many of the most serious risks they face by exercising personal choice. Government can inform individuals about the nature of risks, alter incentives that influence individuals' decisions, or require safe behavior. Two risky activities—cigarette smoking and automobile use—illustrate these points.

### SMOKING: THE GREATEST AVOIDABLE RISK

Smoking presents the largest single source of health risk in America. Table 6–1 lists risks of various activities in terms of the annual fatalities for every 1 million exposed individuals. The fatality risk of smoking is more than 26 times greater than that of work.

TABLE 6–1.—*Estimated risks of various activities*

| Activity or cause | Annual fatalities per 1 million exposed persons |
|---|---|
| Active smoking | 2,950 |
| Alcohol | 541 |
| Accident | 275 |
| Disease | 266 |
| Motor vehicles | 187 |
| Alcohol-invoived | 95 |
| Non-alcohol-involved | 92 |
| Work | 113 |
| Swimming | 22 |
| Passive smoking[1] | 19 |
| All other air pollutants[1] | 6 |
| Football | 6 |
| Electrocution | 2 |
| Lightning | 0.5 |
| DES in cattlefeed | 0.3 |
| Bee sting | 0.2 |
| Basketball | 0.02 |
| All causes | 8,748 |
| All cancers | 1,917 |

[1] Cancer deaths only.

Note.—Activities are not mutually exclusive; there are overlaps between categories. Differences in fatalities do not imply proportionate differences in years of life lost.

Sources: Office of Management and Budget and Council of Economic Advisers.

Every annual report of the Surgeon General since 1964 has identified cigarette smoking as the single most important source of premature mortality among Americans. Studies estimate that of the 565,000 deaths each year from heart disease, 170,000 result from cigarette smoking. Of the 412,000 deaths each year from cancer, 125,000

result from cigarette smoking, with more than 100,000 of these from lung cancer alone. A 25-year-old man who smokes one pack of cigarettes per day can expect to live 4.6 fewer years than one who does not smoke at all, and one who smokes two packs per day can expect his life to be shortened by 8.3 years. Life insurance companies usually charge smokers higher premiums reflecting their greater mortality risk. Some health insurance carriers have also introduced premium differentials based on smoking.

The issue of smoking goes beyond matters of individual choice; secondary smoke affects others. The Surgeon General reports that a nonsmoker whose spouse smokes more than one pack of cigarettes per day has a risk of lung cancer 1.3 to 1.9 times higher than a nonsmoker whose spouse is a nonsmoker. Passive smoking results in an estimated 2,500 fatal cancers per year. Children of smokers have more respiratory problems, and are more frequently hospitalized for bronchitis, pneumonia, and respiratory allergies. Smoking-related fires led to 1,500 deaths and another 4,000 injuries in 1984.

It is not clear whether the pleasures of smoking outweigh the health risks and other costs, even for smokers themselves. When surveyed, more than 90 percent of smokers say they want to quit, and the majority of smokers have tried to quit at least once and failed.

Most smokers begin to smoke as adolescents. Studies of why people start smoking identify the influences of parents, siblings, and friends as the most important causal factors. School curricula in the past tried to discourage smoking by emphasizing its long-term health effects. Newer curricula, targeted at ages 10 through 14, focus on the social influences that encourage the initiation of smoking. Such programs aim at helping children acquire the behavioral skills to resist these influences and at changing perceptions that smoking is mature and sophisticated. Students who participate in these programs have started smoking at rates 15 to 50 percent lower than those in control groups.

The price of cigarettes also influences whether people smoke. Higher prices discourage young people from starting to smoke, but have a much smaller effect on habitual users. The Federal excise tax on cigarettes was raised from 8 cents per pack to 16 cents per pack in 1983, but was scheduled to revert to 8 cents in 1985. Instead, the tax was maintained at 16 cents, and as a result an estimated 1.9 million fewer people smoke, including more than a million fewer under age 25.

Current Federal agricultural policies toward tobacco do not undermine public health efforts to discourage smoking. A system of allotments allows farmers to produce only specified quantities of tobacco and limits the amount they can market. The net effect of the allot-

ments plus price supports and other subsidies is to hold tobacco prices slightly higher, and quantities slightly lower, than they would be in the absence of these programs.

Evidence suggests that information on the consequences of smoking influences behavior. The largest decline in per capita sales of cigarettes, a fall of 8.9 percent, occurred during 1953–54, following publication of two retrospective epidemiological studies that linked lung cancer to smoking and the first laboratory demonstration that the tar in cigarette smoke could cause cancer in animals. During this time, tobacco companies competed vigorously by advertising purportedly less harmful brands, indirectly reminding smokers of the dangers of smoking. The second largest decline in per capita sales occurred in 1968–69, during the height of the antismoking campaigns on television. The largest decline in the number of smokers followed the 1964 Surgeon General's report.

The effects of tobacco advertising are complex. There is little evidence that advertising results in additional smoking. As with many products, advertising mainly shifts consumers among brands. Evidence from other countries suggests that banning tobacco advertising has not discouraged smoking. Four industrialized countries with market economies—Italy, Finland, Iceland, and Singapore—have completely banned advertising for tobacco products, yet have experienced a rise in the per capita consumption of tobacco. Sweden and Denmark enacted partial advertising bans, yet achieved greater success in reducing consumption than did Norway and Finland, which imposed total advertising bans. After the broadcast advertising ban in the United States, cigarette use continued to decline, but at a slower rate than before the ban.

The ban on broadcast advertising was supported by the large tobacco companies. Tobacco advertising expenses were about 35 percent lower in the 5 years following the ban. It is likely that reduced access to public attention made it harder for new brands of cigarettes to enter the market, thus solidifying the market shares of existing companies and brands. Moreover, with no tobacco advertising on television, the antismoking messages required under the Fairness Doctrine were eliminated.

Increased awareness of the health risks of smoking has brought a change in public attitudes and government policies. Forty-two States and the District of Columbia restrict smoking in public places, including government workplaces. Twelve States restrict smoking by public employees and also by those in private businesses. New rules for Federal employees prohibit smoking in nearly all public work areas, including general office space, and permit smoking only in designated areas.

Many automobile deaths stem from avoidable behavior such as drunk driving and failure to wear a safety belt. In 1985, about 44,000 Americans died in motor vehicle accidents, including 6,800 pedestrians and 890 bicyclists. Nearly half of the fatalities involving occupants of motor vehicles occurred in single-vehicle crashes. Despite this substantial loss of life, 1985 was the safest year on record for motorists: the death rate per hundred million vehicle miles traveled (HMVM) was 2.47, down from 5.50 in 1966 and 21.0 in 1923.

*Drunk Driving*

Alcohol impairs physical coordination and can increase aggressive behavior. Alcohol contributes to many kinds of accidents and injuries and is involved in more than 50 percent of fatal automobile accidents. Drunk driving is the leading cause of death for persons in the 15-to-24 age group. About one-half of all single-vehicle crashes and two-thirds of nighttime single-vehicle crashes involve alcohol-intoxicated drivers. In 1982, 63 percent of those killed in alcohol-related automobile accidents were drivers, bicyclists, or pedestrians who had been drinking. Twenty percent were passengers (both drinking and sober) of drinking drivers. The remaining 17 percent, nearly 4,000 people, were sober victims.

Evidence from other countries and recent experience in the United States suggest that programs to deter drivers from drinking by increasing penalties and enforcement tend to succeed in the short run to the extent that they alter drivers' perceptions of the certainty of punishment. But the ability of such programs to achieve lasting reductions in drunk driving fatalities has not been established. This may be because none of the programs or experiments to date has been able to sustain an increase in the probabilities of apprehending and punishing drunk drivers.

State and local actions to restrict the availability of alcohol to young people by raising the minimum drinking age have contributed to reduced traffic fatalities. In 1982, 31 States allowed people under 21 to buy alcoholic beverages, but by 1985, only 7 States did. In those 3 years, motor vehicle fatality rates fell 3.0 percent for the general population, but 6.3 percent for drivers aged 24 and under. If the traffic fatality rate for this group had fallen only by the same amount as for the general population, approximately 600 additional young drivers would have died in automobile accidents in 1985.

Higher alcohol taxes would also reduce fatalities. Federal excise taxes on beer and wine have remained constant in nominal terms since 1951. As a result of this and other factors, the real price of beer fell 27 percent, of wine 21 percent, and of hard liquor 48 per-

cent between 1951 and 1983. Studies of teenage drunk driving indicate that if the real excise tax on beer were at its 1951 level, an estimated 1,000 fewer deaths per year would result, primarily of persons aged 18 to 21.

*Safety Belts*

Motor vehicle occupants who wear a safety belt are less than half as likely to die in the event of an automobile accident as those who do not. If all occupants of motor vehicles wore safety belts, 12,000 to 15,000 fewer persons would die annually. Safety belt use is a clear example of how an individual can reduce risk by taking a simple precaution. For this reason, some State courts, although not going so far as to hold that an accident victim's failure to wear a safety belt constitutes contributory negligence, have reduced the unbelted victim's damage award on the grounds of failure to mitigate the harm.

Even though voluntary safety belt use is an extremely low-cost way to reduce deaths and injuries, as of 1984 only about 12.5 percent of passenger car drivers were estimated to use them. Usage among teenagers appears to be particularly low. Since 1984, 26 States and the District of Columbia have enacted laws requiring use of safety belts (although two States recently repealed theirs). Safety belt usage increases after passage of a belt law, but the longer term effect does not appear to be as great as the initial response.

Compliance with child safety seat laws has been much higher than compliance with safety belt laws, and has been effective in reducing fatalities among young children. In 1977, the first child safety seat law went into effect. Now all 50 States require safety seats for small children. Compliance rates are between 50 and 60 percent. The motor vehicle fatality rate for the overall population fell 10 percent between 1975 and 1985, but for children under 5 it fell 32 percent.

Air bags and automatic safety belts are passive restraints that do not require the cooperation of the driver or passengers. Air bags are more costly to install than either automatic or conventional safety belts. Moreover, their cost-effectiveness relative to safety belts falls with more widespread belt usage. Even if air bags were required in all new cars, they would not come into nearly universal use until about 10 years later. Current Department of Transportation regulations require phased installation of passive restraint systems unless States comprising two-thirds of the U.S. population enact safety belt laws.

*The 55-Miles Per Hour Speed Limit*

The driver who speeds assumes a higher risk of death and injury but also increases risk for others. It is because of this externality that

a maximum speed limit is in the interest of most drivers. The main cost of a lower speed limit is more time spent traveling.

The primary goal of the National Maximum Speed Limit Act of 1974 was energy conservation. Today, with low real oil prices, debate concerning the 55-miles per hour (MPH) speed limit focuses more on safety than energy conservation. From 1973 to 1974, the overall death rate per HMVM dropped 14 percent from 4.12 to 3.53. (A similar drop of 13 percent in the death rate, from 3.17 to 2.76 per HMVM, occurred between 1981 and 1982.) Although drivers have gradually increased their average speed since the 55-MPH limit was introduced, they have not returned to the speeds at which they were driving before the Federal limit was enacted. The fatality rate per HMVM, however, has continued to fall, suggesting that factors other than speed are important in the declining fatality trend.

Variations in fatality rates across States and types of roads suggest that speed limits should be tailored to local conditions. In 1985, the automobile accident fatality rate ranged from 4.1 deaths per HMVM in New Mexico to 1.6 in North Dakota. The safest roads are the interstate highways in urban areas, with a fatality rate of 1.01 deaths per HMVM. Local rural roads are the least safe, with a fatality rate of 4.99. Driving at night is three times more risky than driving during the day.

Although it left enforcement of the 55-MPH speed limit to the States, the Federal Highway Safety Act of 1978 directed withholding a portion (up to 10 percent) of a State's Federal highway funds if it failed to achieve at least 50 percent compliance. As a result, States assign their highway patrol officers to enforcing the 55-MPH limit, diverting them from other efforts that would be more effective in saving lives. To reach compliance, States have an incentive to allocate most officers to work during the day, when traffic is the heaviest, rather than at night, when a majority of motor vehicle deaths occur. State discretion in the regulation of highway speeds could improve safety more than centralized Federal regulation.

*The Unintended Hazards of Fuel Economy Regulation*

Like the 55-MPH speed limit, the Corporate Average Fuel Economy (CAFE) regulations are a vestige of the "energy crisis." The CAFE standards (enacted as part of the Energy Policy and Conservation Act of 1975) established minimum average levels of fuel economy for passenger cars sold by each automobile manufacturer. To meet the standards, manufacturers took a number of steps, including switching to lighter materials and reducing the weight and size of cars. Market forces also shifted the automobile fleet in the direction of smaller cars while gasoline prices remained high. Automobiles

have become safer as design has improved. Other things equal, however, small automobiles are less safe than large ones.

In single-vehicle crashes, occupant death rates are inversely related to car size. In multiple-car crashes involving cars of the same size, occupants of small cars have a death rate higher than occupants of large cars. In crashes between cars of different size, the occupants of the larger car have a better chance of survival than if they had been involved in a crash with a car the same size, but occupants of the smaller car have a worse chance of survival than if they had been in a crash with another small car.

There is evidence that drivers of small cars attempt to mitigate their increased risk by driving more carefully. One study indicates that, taking age into account, drivers of small cars are somewhat less likely to be involved in an accident than are drivers of larger cars. Even so, the fatality rate associated with small cars is higher than that of large cars.

The "energy crisis" has passed, but Federal regulation of automobile fuel economy persists. To the extent that CAFE has reduced the size of cars driven by Americans, it also has indirectly reduced automobile safety.

## THE TORT SYSTEM

In addition to self-inflicted injury, harm can result from the actions of others. Tort law, the civil law governing harms other than breach of contract, serves to compensate persons injured by the negligent or wrongful conduct of others, and also to deter such conduct.

Two general rules of liability guide accident law—negligence and strict liability. Negligence is determined by reasonableness of conduct. If the injurer acted unreasonably, that is, failed to exercise due care, then ordinarily the injurer would be required to compensate the victim. Strict liability, on the other hand, focuses on whether a product that caused an injury was defective in such a way as to make it unreasonably dangerous for its intended use. Both standards seek to impose a duty of care; strict liability, however, allows demonstration of the breach of that duty by examination of the product itself.

The product user's degree of care also can affect the risk of accidents. In certain instances, the user can more easily eliminate or reduce the risk of injury than can the manufacturer. The rule of contributory negligence limits the scope of liability so that an injurer is not liable for harm that could have been avoided had the victim not been negligent. Many States have adopted the rule of comparative fault, under which an injurer is liable only for that share of the harm corresponding to the injurer's share of responsibility. Determining

the reasonableness of a party's conduct depends in part on the costs of avoiding the accident. When both parties can affect the probability or seriousness of an accidental injury, the rule of negligence (or the rule of strict liability accompanied by the defense of contributory negligence or comparative fault) leads both the potential injurer and potential victim to behave reasonably to avoid accidents.

## THE "LIABILITY CRISIS"

During the past several years, products and services as diverse as vaccines and skating rinks have been withdrawn from the market because of the greatly increased price or unavailability of liability insurance. Investment in product innovations, such as new pharmaceuticals, has been retarded because of potential liability costs. Some explanations of the "liability crisis" attribute the scarcity of liability insurance to an expansion in liability exposure under tort law. In particular, the alleged crisis has been linked to trends in legal rules on fault and causation and to larger jury verdicts for damages.

In the early 1960s, courts began to replace traditional common law rules of negligence with strict liability. It was argued that expanding liability would encourage the supplier of a good to prevent accidents; in addition, the supplier would provide insurance for unpreventable injuries. Some courts went so far as to say that business defendants could spread the cost of compensating victims across all consumers simply by charging higher prices for their goods and services. This viewpoint assumed that society would benefit from replacing personal responsibility for accidental injuries with expanded liability for those supplying goods and services. Carried to its extreme, this approach would entirely remove the issue of fault or wrongdoing from the determination of liability.

The growing trend toward no-fault liability has increased defendants' expected tort costs and, therefore, their need for insurance coverage. Historically, tort law required a plaintiff to prove a direct cause-and-effect relationship between the defendant's act and the plaintiff's harm. This requirement of proximate cause eroded as some courts allowed plaintiffs to recover an entire judgment award from any of a number of parties who might have contributed to the harm. This application of joint and several liability to product liability cases increased the potential financial exposure of defendants and further weakened the traditional legal requirements of fault and proximate causation. In practical terms, joint and several liability threatens any defendant having substantial financial resources with the risk of having to pay the entire damage award in a lawsuit involving multiple defendants, even if this defendant was only slightly at fault for the plaintiff's injury.

### TORT REFORM

Many States have enacted or are considering reforms in tort law. The Administration has also supported legislation to address the factors that have led to the high price and scarcity of product liability insurance. This legislation would ensure that fault remains a basis for determining legal liability for injury caused by a defective product. For a manufacturer to be found liable under strict product liability, the product would have to be defective and unreasonably dangerous because of its defect. This reform would limit strict product liability to situations in which the doctrine originally applied, before the expansion of no-fault liability.

Another provision of the Administration's tort reform proposal would make joint and several liability inapplicable to product liability cases. A manufacturer found liable for damages would be responsible for at most those damages directly attributable to its share of fault for the injury; the manufacturer could not be held responsible for damages arising from another party's share of fault. However, joint and several liability would still be available where two or more defendants consciously acted together in a common scheme or plan that directly caused the plaintiff's injury.

These proposals seek to ensure that fault and wrongdoing continue to be essential to determining liability for defective products. These reforms should lessen the unpredictability of product liability awards for manufacturers and insurers and, by emphasizing the importance of personal responsibility, reduce accidents.

## CONSUMER PRODUCTS AND THE WORKPLACE

Of the 92,500 accident fatalities in the United States in 1985, about half were caused by motor vehicle crashes, 22 percent by accidents at home, and 13 percent by accidents at work. In an effort to improve safety, the government requires consumers and private firms to devote resources to meeting regulatory standards, develops and disseminates information, requires controlled testing of new drugs, and requires injury compensation insurance for workers. Government rules also modify market incentives for safe behavior.

### CONSUMER PRODUCT SAFETY

Markets generate strong incentives for the production and safe use of consumer products. Safer products may be more expensive, because of superior materials, product design, and quality control. Many consumers are willing to pay higher prices for safer products as long as they perceive that the benefits of improved safety exceed the additional costs. Consumers acquire safety information through per-

sonal experience and word of mouth, as well as from manufacturers, specialized testing laboratories, and consumer groups. The risks of unsafe products generally are borne directly by consumers, with little spillover of hazards beyond the immediate household. Thus, market incentives will guide manufacturers to produce products as safe as consumers' willingness to pay allows.

The Food and Drug Administration (FDA) regulates food, drugs, and cosmetics. Its standard-setting and inspection activities are designed to reduce hazards about which it is difficult to obtain information in the marketplace. Examples include the safety of food additives and the safety and efficacy of pharmaceuticals.

The Delaney Clause of the Food, Drug, and Cosmetic Act has been interpreted to ban all food additives found by the FDA "to induce cancer in man or animal." In effect, this restriction has grown more stringent over the years, as advances in chemistry have permitted the detection of extremely small amounts of substances in additives. In 1985, the FDA proposed that methylene chloride be banned in hair spray, but that it be allowed as a decaffeinating agent in coffee because its risk in that use is negligible. This de minimis interpretation of no-risk statutory provisions is intended to reduce regulation that is overly costly. Recognizing the excessively restrictive nature of the Delaney Clause, Congress has exempted saccharin from its reach.

The Consumer Product Safety Commission (CPSC) has broad authority to set standards and order bans, recalls, and modifications. Its purpose is to reduce hazards by improving products' technological safety characteristics. Such activities, however, may fail to benefit consumers and can have adverse effects. Sometimes safer products are more costly, and regulation may impose higher safety levels than consumers are willing to purchase. To reduce the likelihood of this result, the law mandates cost-benefit analysis for formal CPSC rulemakings. The CPSC has adopted cost-benefit criteria for its other activities, such as implementing voluntary standards.

Even if a product standard meets a cost-benefit test, the market might have achieved an equivalent level of product safety. Moreover, even if the estimated costs of regulation match the benefits, regulated product standards may not be desirable because benefits that stem from product diversity will be lost. Consumers value safety, like other product characteristics, differently, in part because not all consumers use products in the same way. If a household appliance is to be used by children, parents may buy a safer model at a higher price than they would otherwise. Individuals benefit from the opportunity to make their own tradeoffs based on price, quality, and safety.

When product regulation reduces competition and thereby increases prices, it restricts consumers' choices. For example, in 1975

the CPSC issued a bicycle standard that imposed numerous technical design features that would increase costs and exclude some bicycles from the market. Some of these specifications, such as the one that handlebars be between 14 and 28 inches wide, were overturned in court for lack of evidence that their absence would pose an unreasonable risk of injury.

The effectiveness of product regulation in improving safety can be undermined and even reversed by risk displacement. For example, manufacturers of children's sleepwear used the flame-retardant chemical Tris to comply with the flammability standard issued in 1973. Later, when it was discovered that Tris can be carcinogenic, the sale of Tris-coated sleepwear was banned. Some consumers may stop buying products whose prices rise as a result of safety regulation, only to substitute alternatives that are more dangerous.

## THE REGULATION OF NEW DRUGS

Advances in pharmacology have produced drugs that prolong life and improve health. Many diseases that took a substantial toll in the past, such as polio and pneumonia, are now inexpensively prevented or treated with vaccines or drugs.

Regulation of the introduction and use of new drugs poses difficult policy questions. Government oversight of the testing and approval of new drugs has both therapeutic benefits and costs. It is not in the public interest to introduce a drug with side effects or risks more severe than the disease it is intended to treat. The relative efficacy of a new drug compared with existing therapies cannot be established without controlled experiments, including clinical trials. However, the time spent in testing means that some potential beneficiaries of a new drug are not able to obtain it. Unnecessarily stringent regulatory requirements can lead to more deaths and lower health levels.

The 1962 amendments to the Food, Drug, and Cosmetic Act added a proof-of-effectiveness requirement that expanded the experimental and testing procedures required by the FDA for new drug approval. Some evidence indicates that the result was a delay in the introduction in the United States during the 1970s of certain innovative therapeutic drugs by as much as 3 to 6 years after their introduction in Great Britain. The 1962 amendments increased costs to pharmaceutical companies of introducing a new drug, and also lengthened the approval process, shortening the time that a manufacturer could retain patent protection. Incentives to innovate were thereby reduced.

Recent legislative and administrative changes have expedited drug review. Legislation in 1984 allowed an abbreviated approval process for generic versions of drugs previously proven safe and effective,

and restored patent life lost during FDA review. In 1985, the FDA rewrote approval procedures for new drugs to reduce paperwork and allow expanded use of valid data from foreign studies. The FDA has also allowed controlled use of experimental drugs that show substantial promise in treating fatal diseases. Limited use of azidothymidine (AZT) has been permitted for treatment of acquired immune deficiency syndrome (AIDS). In certain cases, the agency also allows use of experimental drugs by patients suffering from serious diseases when there is no alternative treatment.

## OCCUPATIONAL SAFETY

Risks of death from work accidents, along with other types of safety hazards, have declined sharply. Injury rates, which are less reliably measured than death rates, have also declined, but less rapidly. As people demanded better working conditions and safety on the job, they also sought increased government regulation of workplace safety. Among the many laws and regulations that address job safety, the major ones are State workers' compensation acts and the Federal Occupational Safety and Health Act. Both workers' compensation and the OSHA statute were expected to reduce work injuries, but many of their possible effects on costs were overlooked.

### *Labor Market Safety Incentives*

Work-related accidents and diseases impose costs on employees that include premature death and disability, suffering, loss of earnings, and medical expenses. Safety and health on the job are not produced by employers alone, but are determined jointly by the actions of workers and employers. Individuals can reduce job risks by acquiring information about job safety and using that information to bargain for safer working conditions, as well as by exercising personal care. Workers and employers can enter into contracts or labor agreements that specify safe working conditions or payments to be made in the event of an injury.

The labor market provides strong incentives for employers to improve safety. In order to make a hazardous job attractive to workers, a firm must offer higher wages than it would have to pay otherwise. Wage premiums are a critical device for controlling job hazards because they provide employers with incentives to reduce hazards in order to reduce wage costs. Additional incentives for employers to increase job safety include the desire to reduce work accidents and injuries in their firms and the costs associated with job hazards—absence from work, interruptions in production, and employee turnover. The level of workplace safety is determined in a way that equates the marginal cost of additional safety measures with their marginal

benefit to employers, as indicated by savings in wage premiums and other costs.

In efficient labor markets, wage premiums result in appropriate matching of workers and jobs based on risk and other factors. Workers who are more risk-averse will demand higher wage premiums for risky jobs than workers who are less risk-averse, and thus will be less likely to take jobs with relatively high probabilities of injury. Similarly, the labor market offers incentives to both workers and employers to implement job matches based on differing personal vulnerabilities to job hazards. For example, if short police officers face greater risks of assault, smaller people will be less likely to take police jobs for a given wage. To some extent, however, legal prohibitions against discrimination limit the ability of firms to screen workers on the basis of vulnerability to job risks.

Imperfect information may militate against fully efficient labor market outcomes, thus providing a rationale for regulation or other government intervention. However, studies have found evidence that job safety information, although not perfect, is generally adequate. Workers have reasonably accurate perceptions of risks, and if they acquire new information suggesting risks greater than they originally had expected, their likelihood of quitting increases.

Workers' knowledge of health risks is probably less accurate than their knowledge of safety risks. It is more difficult to link disease and work than accidental injuries and work because of the delayed onset of symptoms, difficulty of detecting many harmful agents, multiplicity of causes, and uncertainties in the relationship between exposure levels and health effects. Workers, however, are often aware of health hazards, and in some cases perceive very high risks from possible carcinogens in the workplace.

Government also has limited knowledge of occupational health hazards, but it can improve the information available to both employees and employers by supporting research on job safety and disseminating the results. Government, however, has no clear advantage over workers, labor unions, and employers in using this information to determine appropriate levels of workplace safety or the best way to reduce hazards.

Pecuniary costs of job injuries are commonly shifted to the general public by income transfers such as social security disability payments, welfare, and food stamps. This reduces firms' incentives to take safety measures, by enabling them to pay lower wage premiums. Even where information is not perfect or pecuniary externalities exist, however, wage premiums serve a useful function in providing safety incentives and in matching workers with jobs.

*Workers' Compensation*

Workers' compensation statutes were enacted in most States early in the 20th century. Before that, the principal recourse of workers who suffered job injuries was to sue their employers for compensation. Proving that the employer had been negligent and that the worker had not contributed to the accident was difficult, however, and damage awards were highly uncertain. Under workers' compensation, employers assumed no-fault but limited liability for work injuries, and industrial accident victims gained the right to prompt compensation for a portion of lost wages and medical expenses.

Except for the largest firms, which are allowed to self-insure, employers must buy insurance from a private carrier or a State insurance fund to cover their workers' compensation liabilities. Some State funds are exclusive carriers, but others compete with private insurers. Premiums are experience-rated—that is, linked to past loss experience—only for larger firms. The smallest firms generally are rated by industrial-occupational classifications; the degree of experience rating increases with firm size. Most workers are employed by firms that are either experience-rated to some degree or self-insured.

Although the impetus for adoption of workers' compensation was to replace employers' tort liability with a no-fault system, safety incentives were an additional consideration. Workers' compensation was expected to induce employers to provide greater workplace safety because each firm would assume the costs of its workers' injuries more predictably than under tort liability. The costs of industrial injuries thus would be included among other business costs, and employers would be motivated to reduce them by increasing job safety. This expectation of improved safety, however, overlooked factors that would undermine safety: reduced wage premiums in response to lower but more certain recovery of damages, and reduced incentives for employers to increase safety when workers' compensation premiums are not closely related to the injuries suffered by employees.

A growing body of research has found that workers' compensation benefits have unfavorable effects on safety. Higher benefits appear to increase both the frequency of work injuries and the number of compensation claims filed. One explanation for the positive connection is the claim effect. Even if actual injuries remain constant, workers are more likely to file claims when benefits are higher, thereby producing more reported injuries.

Lack of experience rating of workers' compensation premiums reduces an employer's incentives to invest in safety measures. A firm that is not forced to bear the full costs of compensating its workers for their injuries has a diminished incentive to make expenditures that promote safety. Recent research has found that increased bene-

fits produce a smaller increase in injury rates in firms whose premiums are more highly experience-rated than in firms that pay class rates. Employers' safety incentives could be strengthened by requiring them to make a deductible payment and copayment on each claim. Many insurance companies maintain staffs that help their clients correct occupational health and safety problems, such as worksite fire hazards. To the extent that private carriers provide more accident-prevention services than exclusive State insurance funds, more of such services would become available by allowing private insurers to compete with or supplant such funds.

Workers' compensation has improved the reliability of compensation to injured workers. By replacing lost wages, it also has enabled injured workers to recuperate more fully before returning to work. There is evidence, however, analogous to findings on the effects of unemployment insurance, that higher levels of workers' compensation benefits create work disincentives. Recipients whose benefits are relatively high compared with their previous wages have longer durations of work disability. Work disincentive effects can be important: because benefits are not taxable, the after-tax rate of wage replacement for some workers exceeds 100 percent of their prior wages.

Although one goal of workers' compensation was to reduce the high transactions costs of litigation, many workers' compensation claims are still contested. Workers, moreover, are making liability claims with increasing frequency against suppliers of inputs, commonly in situations where adverse effects on health, such as those related to cancer, may be delayed. Such suits are not barred under the no-fault workers' compensation system.

*Regulation of Job Safety*

The Occupational Safety and Health Act's sweeping mandate is to ensure that "so far as possible every working man and woman in the Nation [has] safe and healthful working conditions." OSHA has issued several thousand workplace standards, the large majority of which were adopted soon after OSHA's formation and formalized existing industry practices. Some of the most obviously ineffective of these have since been revoked. Most of OSHA's rules deal with safety rather than health hazards. Employers continue to complain that OSHA's regulations are costly, but no comprehensive estimates of compliance costs have been made.

Compared with the magnitude of safety incentives provided in the market, OSHA's fines and enforcement activities are small. One estimate of wage premiums generated by job risks is approximately $90 billion per year, which compares with about $9 million in OSHA fines. By comparison, workers' compensation benefits are about $20 billion annually.

A number of studies have found that OSHA's activities have not been effective in promoting workplace safety. Before the establishment of OSHA, evidence was lacking that working conditions were safer or healthier in States with stricter regulatory standards. Over recent decades, the job fatality rate has declined fairly steadily by more than 2 percent per year. OSHA has not made an identifiable difference in this rate of decline. One recent study, however, has found that OSHA's activities have resulted in a small reduction in work injuries. It is more difficult to assess OSHA's effects on health, because of the time lag between a worker's exposure to a toxic chemical or environmental hazard and the manifestation of disease. This Administration has taken steps to enhance the effectiveness and reduce the burdens of OSHA's inspections. Inspections are now less confrontational and are targeted toward high-risk firms and serious workplace hazards.

OSHA's effects on health and safety may be small because of the type of regulations it has promulgated. Many require specific changes in the physical work environment rather than encouraging safe behavior. For example, OSHA has not required the use of automobile safety belts, although motor vehicle fatalities account for about one-third of total work deaths (Chart 6–3). Even in manufacturing, motor vehicle deaths are close to 20 percent of work deaths. Executive Order No. 12566, issued in 1986, requires safety belt use by Federal employees.

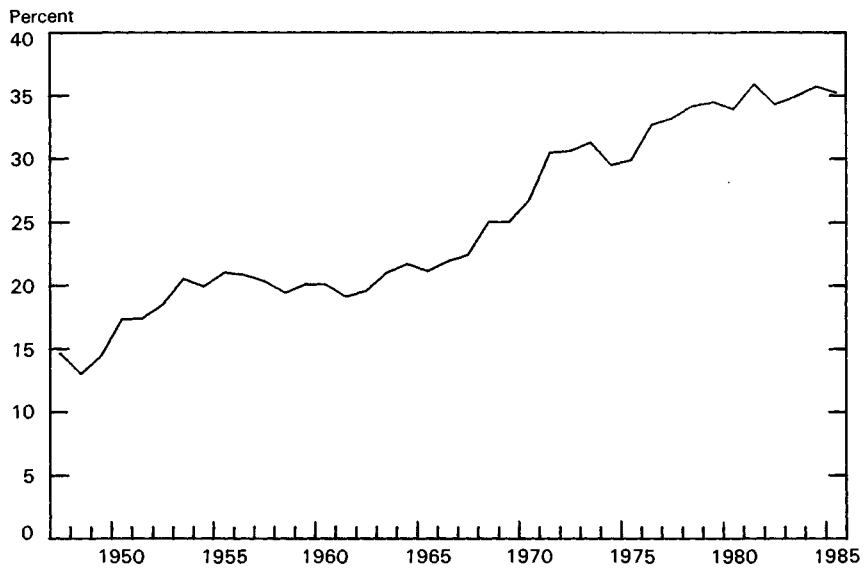
Although precise causation of work injuries is difficult to establish, studies show that individual behavior is a major factor in many work accidents. Studies of occupational fatalities have found that 9 to 40 percent are alcohol-related.

Executive Order No. 12291 broadly requires the use of cost-benefit criteria for agency rulemaking, to the extent permitted by law. The Supreme Court has interpreted OSHA's legislative mandate as prohibiting the balancing of costs and benefits in formulating health regulations. OSHA has adopted a restricted cost-effectiveness approach in accordance with this decision, allowing lowest cost methods of compliance in achieving a given technical standard. Studies of past OSHA rules show that costs typically exceed expected benefits. The recent OSHA hazard communication standard, requiring that workers be informed of workplace hazards, is an important exception.

A major criticism of OSHA is that many of its regulations have unnecessarily increased costs by preventing employers from using flexible means to meet health and safety goals. In contrast, OSHA's hazard communication rule requires that workers be informed about chemical hazards, but leaves employers leeway in implementation. OSHA regulations have tended to specify technical characteristics of

Chart 6-3

Motor Vehicle Deaths as Percent of Total Work Deaths




Source: National Safety Council.

workplace design. Performance standards, which define acceptable levels of workers' exposure to hazards and allow employers to find the most cost-effective ways to meet them, are often at least as effective. In the case of the cotton dust standard, for example, the risk of lung disease could be reduced by allowing the use of disposable masks. OSHA's preference for engineering controls rather than personal protective equipment is based, among other factors, on concerns that protective devices may be cumbersome, may not be used consistently, and may not provide adequate protection over long periods of time.

OSHA's preference for engineering controls is particularly costly in the case of noise control. Relatively inexpensive ear plugs can often protect workers as effectively as reducing the noise level, which generally can be achieved only through costly modifications in work processes, machinery, or plant design. It has been estimated that allowing greater flexibility in methods of compliance would reduce the cost of occupational health regulations by 20 to 80 percent.

Many of OSHA's standards increase costs and reduce productivity and competitiveness. Where OSHA's rules increase capital require-

ments, they also reduce employment opportunities, by encouraging the substitution of capital for labor. Where OSHA's rules specify characteristics of workplace design, they impose fixed costs that tend to favor larger firms over smaller ones.

The evidence on whether workers' compensation and OSHA have improved safety is mixed at best. Most studies indicate that these programs have failed to reduce job injuries in the aggregate. Although workers' compensation achieved some of its goals, it also may have undermined safety incentives. Both workers' compensation and OSHA have generated costs and indirect effects that have tended to reduce productivity.

## ENVIRONMENTAL RISK

Environmental externalities stem from the release of harmful substances into a common resource, such as the air, a lake, a river, or the ocean. Lack of private ownership of such resources makes it difficult for those injured or inconvenienced to charge polluters for the losses suffered. The costs of organizing those harmed by pollution hampers the use of tort remedies. Aiso, the cause of the harm is frequently impossible to identify. The same pollutant may be produced by automobiles, utilities, industrial plants, and natural processes.

Management of environmental risk entails dealing with large uncertainties in the magnitude of potential losses. Environmental risks frequently involve effects extending over a wide area or across international boundaries, and sometimes include effects that may occur far in the future.

### CONTROL OF AIR AND WATER POLLUTION

Direct controls have been the most common regulatory strategy for reducing pollution in the United States. Alternatively, if emissions were taxed or if permits for emissions were in a form that could be traded, emitters would take account of the costs of pollution they produce. Actual or implicit market valuation of these permits would induce firms to include the costs of pollution among their other costs of production. A market in pollution permits would result in a reduction of emissions to the required level at the lowest total cost. The Environmental Protection Agency has begun to implement market-based control programs, including "bubbles," which allow several sources to be considered as a group in meeting emissions targets. These emissions-trading strategies ensure that sources having the lowest costs of control will reduce emissions most.

The United States has devoted considerable resources to reducing pollution. In 1984, total public and private expenditures for pollution

abatement and control were approximately $68.5 billion (1984 dollars), or 1.8 percent of GNP. Of these expenditures, 45 percent was for control of air emissions and 38 percent for water pollution control.

Measurable improvements in environmental quality have been achieved. Average concentrations of the six atmospheric pollutants subject to National Ambient Air Quality Standards (NAAQS) have declined over the past decade (1975-84). The NAAQS have been reached in almost all parts of the country for sulfur dioxide, nitrogen dioxide, and lead. In some areas, carbon monoxide and total suspended particulates standards have not been met. Surface-level ozone is the largest remaining problem, although most people live in counties that meet the ozone standard. Significant improvements in water quality have also been reported. It is difficult to determine, however, whether these gains carry with them benefits larger than the costs of their attainment.

Misallocations of capital and reduced productivity result from certain features of current environmental regulation. One example of this sort of distortion is the "new source bias." New plants must meet more stringent air emissions standards than old ones. Another example is that regions with air that is cleaner than national standards must regulate new sources to achieve "prevention of significant deterioration" of their already superior air quality. The first of these requirements gives an economic advantage to older plants compared with newer ones, while the second favors particular regions over others. Both discourage investment in more modern facilities.

## CONTROL OF ENVIRONMENTAL RISKS

Management of environmental risk addresses more than the failure of markets to motivate firms and individuals to take account of the effects of their actions on the environment. Insufficient scientific knowledge often makes it difficult to balance the costs and benefits of alternative environmental policies.

### *Stratospheric Ozone Depletion*

Stratospheric ozone has been a focus of research and policy concern since the 1970s. Certain otherwise useful and harmless chemicals—primarily chlorofluorocarbons (CFCs)—released into the atmosphere eventually diffuse to the stratosphere, where they may interact with and break down the ozone layer. A reduction in the amount of stratospheric ozone would allow more biologically damaging ultraviolet radiation to reach the Earth's surface. Increased ultraviolet radiation has been associated with deleterious effects on health, including various forms of skin cancer, and with reductions in the yields of

some crops. CFCs also are greenhouse gases, like carbon dioxide, which may contribute to global warming.

CFCs and related compounds are stable chemicals used in refrigeration, air conditioning, and fire extinguisher systems; in foam production; as aerosol propellants; and in electronics manufacture. Annual world output of the two most important CFCs increased almost fivefold from 1960 to 1985. Worldwide production of these two chemicals peaked in 1974 and then declined until 1982, primarily because of reduction in their use as aerosol propellants in the United States (which banned nonessential aerosol applications in 1978) and a few other countries. Nonaerosol usage accounts for approximately 70 percent of all CFC applications, however, and total world production of the main CFCs has grown since 1982 by approximately 5.3 percent per year. Because of the long lifetime of the molecules, emissions may affect the ozone layer for many years.

Although the consequences of stratospheric ozone depletion may be extremely serious, estimates of the magnitudes of the potential damages are highly uncertain. The largest unknowns involve forecasts of future emissions of CFCs and other greenhouse gases, the physical and chemical mechanisms of ozone depletion, and the effects of increased ultraviolet radiation on living organisms. The recent discovery of large changes in the seasonal pattern of ozone levels over Antarctica raises doubts about the current state of knowledge about stratospheric ozone dynamics and chemistry. Some scientists claim that CFCs are the cause of these changes, but others believe they have a natural cause.

Ozone depletion is a global issue. Most world CFC production is concentrated in the industrialized countries, with the U.S. share slightly over 30 percent in recent years. Unilateral action to control CFCs is not likely to be effective, and could even reduce the opportunity for international cooperation by removing some of the incentive for other nations to reduce CFC release. International agreement on controls would prevent the loss of competitiveness that could result if the United States were to act alone to control CFCs further.

In 1985, the United States signed the Vienna Convention for the Protection of the Ozone Layer, which provides for international cooperation in research, monitoring, and information exchange. The United States is currently participating in negotiations to implement this agreement, and has proposed a near-term freeze on ozone-depleting emissions, a long-term reduction of emissions, and periodic review of controls. In view of the uncertainties regarding the extent and consequences of ozone depletion, it is appropriate that emissions reduction policy provide for periodic reassessment of the levels and effectiveness of controls as new information becomes available.

*Acid Rain*

Acid deposition, known as acid rain when it takes the form of liquid precipitation, is another major environmental concern. Acid deposition may have a number of adverse effects on the environment, but few are well established. Emissions of some air pollutants contribute to the acidification of certain sensitive lakes and streams, but other cause-and-effect relationships are not clearly understood.

Combustion of many types of fossil fuels produces oxides of sulfur and of nitrogen. These combustion products can be chemically transformed into acidic compounds, sometimes after being transported hundreds of miles from their source. Rain is naturally acidic, but manmade contributions to acid deposition are much greater than natural sources in industrial regions such as the Eastern United States and Southeastern Canada.

Air pollutants that are precursors of acid deposition are regulated under the NAAQS. The direct effects of these pollutants, such as soot, smog, and haze, as well as their possible hazards to health, are distinct from their indirect effects through acid deposition. Thus, reducing these primary pollutants would have benefits beyond those associated with the resulting reduction of acid rain.

The mechanisms of atmospheric transport in the acid deposition process are not well understood. The areas of North America that show apparent effects of acid deposition are generally downwind of the power plants, smelters, and urban areas that are the main sources of precursor emissions. But it is not known specifically what fraction of acid deposition in the Adirondacks, for example, originates in particular regions. Further, deposition varies from site to site and from year to year at the same site because of meteorological variations.

Uncertainty also surrounds the effects of acid deposition. Visible damage to U.S. forests appears to be confined largely to trees in the East, with most of the damage occurring at higher elevations. The hypotheses that have been advanced to account for the decline of these forests include the effects of climate cycles and other air pollutants as well as acid deposition. The effects of acid precipitation on surface waters are complex. Damage to lakes and streams can occur only if they are sensitive to acidification, that is, only if they lack naturally occurring neutralizing chemicals in their watersheds. Most large lakes in the Eastern United States are not acidified, either because they are not sensitive or are not located in areas of sufficient acid deposition. Although higher acid concentrations present a potential danger of dissolving heavy metals in municipal water supplies, no such contamination has been established in the United States. Adverse effects of acid rain on crops and soils have been suggested, but have not been shown to be significant.

Transboundary deposition is of major concern to Canada. The usual difficulties of assessing environmental risks and internalizing costs are magnified because some costs and benefits occur in another country. Acid rain has been the subject of high-level discussions between the United States and Canada, and the U.S. Government has endorsed a recommendation that it undertake a 5-year, $5-billion program in conjunction with private industry to develop a more extensive set of commercial control technologies than is now available.

Some proposals to control acid precursor emissions have been made that go far beyond these demonstration projects. Acid rain control programs that have been proposed in Congress would impose costs of $3 billion to $9 billion per year. Sulfur dioxide control methods include switching to coal with lower sulfur content, removing some of the sulfur before combustion (coal washing), or removing the sulfur during or after combustion. Costs tend to be lower for programs that involve switching from high-sulfur to low-sulfur coal, but switching would disrupt the regions that mine high-sulfur coal.

Current regulations and laws might be modified to alleviate acid deposition at relatively low cost. The Powerplant and Industrial Fuel Use Act of 1978, for example, prohibits use of natural gas in new industrial or electricity-generating facilities without a special exemption. Natural gas combustion releases minimal levels of sulfur dioxide and fewer oxides of nitrogen than coal burning. Use of coal is also encouraged by obstacles to the construction of nuclear power plants. More stringent air quality emissions standards for new sources have, along with other factors, prolonged the useful lifetime of older power plants, which produce relatively more acid precursors.

A large and rapid reduction in emissions nationwide would be very expensive. Low-cost options, such as liming of lakes, may be able to mitigate acidification in some cases. Identifiable economic benefits of lower levels of acid deposition in the United States appear to be small, although reducing acid precursors might benefit urban areas by improving ambient air quality. For any large-scale control effort, questions remain as to how best to achieve the desired results. For example, better understanding of atmospheric transport mechanisms is necessary to decide whether to target emissions from particular regions. The costs of undertaking an ambitious emissions control program need to be balanced against the relatively low risks of waiting to resolve the scientific uncertainties surrounding the causes and effects of acid deposition.

*Biotechnology*

Biotechnology is the use of biological systems and organisms in household, agricultural, and industrial production. In its broadest

context, it is an ancient practice that includes such familiar applications as the use of yeast in baking bread and brewing beer and the use of cultures in making cheese and yogurt. The most recent advances include genetic manipulation technologies, such as recombinant DNA, recombinant RNA, and cell fusion, that allow more precise and predictable methods of producing old products or creating new ones.

The benefits of biotechnology to society are substantial, and include opportunities for new and better medicines and therapies for disease, more efficient food production, and pollution control. Biotechnology has already provided new drugs and improved existing drugs and vaccines. It has reduced the cost of insulin and interferon.

Health and safety concerns related to use of living organisms include the effects of accidental release from contained facilities and the side effects of environmental applications. Releases that occur commonly in facilities using low-risk microorganisms to produce products such as penicillin, tetracycline, or industrial enzymes are not harmful to persons or the environment. More stringent containment conditions are employed for hazardous organisms.

Introduction of new plants, animals, and microorganisms into the environment has long been commonplace. It occurs whenever new crop varieties are planted or animals are selectively bred. Microorganisms are released as pesticides and to improve plant growth. For example, large numbers of genetically improved nitrogen-fixing bacteria are added to agricultural soils in the United States each year.

The environmental risk from the release of a genetically engineered organism is that it may have unforeseen effects on plants, animals, or human beings. Because living organisms are self-replicating, it might be difficult to control the spread of an organism whose harmful effects were discovered only after its release. Adverse consequences from bringing an alien species into a new environment, however, are not confined to cases of genetic manipulation. The kudzu vine was introduced to the United States for soil conservation, but rapidly spread, becoming a pest in some areas. Other imported species, such as the gypsy moth, have caused environmental damage.

A framework for coordinating Federal regulation of biotechnology was established in 1986. This framework built on existing legislation and practices, but imposed additional levels of Federal review for certain environmental applications, particularly of new microorganisms. To the greatest extent possible, responsibility for regulating a specific product will be placed with a single agency. Regulatory coordination should reduce uncertainty, encourage consistency in the rigor of scientific reviews across agencies, and provide the flexibility to modify regulations as scientific knowledge advances. The aim of

the Administration's regulatory policy is to safeguard public health and the environment without blocking the development and commercial use of this highly productive new technology.

## CONCLUSION

Government regulation can reduce some risks significantly, but it can also reduce productivity, personal income, and individual choice. Risks ordinarily cannot be controlled without cost. The resources used to reduce them are not available for alternative improvements in safety or well-being. When government regulates, makes public expenditures, or requires private expenditures to reduce risk, the cost of these actions should be weighed against their likely benefits.

It is not possible to eliminate all hazards to safety and health, nor is it desirable for the government to attempt to reduce risks that could be controlled in less costly ways. In many cases, government control of risk is neither efficient nor effective. Markets accommodate individual preferences for avoiding risk and produce information that helps people make informed choices. Markets and the legal system provide powerful incentives for reducing personal hazards; government regulatory actions should avoid diminishing the incentives for safety that markets and tort law provide. Because many of the greatest risks are subject to personal control, government regulation can never replace the need for responsible individual action.

CHAPTER 7

# Women in the Labor Force

WOMEN NOW CONSTITUTE 44 percent of the U.S. labor force. They provide services that range from teaching, air traffic control, medicine, and legal advice to administrative and technical support. Women have always played a major productive role in American society. In this century, however, they have increasingly shifted their productive activities from the home to the marketplace. This shift was accomplished through market processes, without the intervention of government in either job training or job placement activities.

In the early 20th century, about 20 percent of women worked outside the home, and those who did were typically single or widowed. By 1986, the majority of adult women (two-thirds of those between the ages of 25 and 54) worked outside the home and most were married. Female employment increased throughout the century, but the pace has accelerated since World War II. In the postwar period, the number of women working in the United States has risen from 16 million to 49 million. That this important structural change was accomplished in an environment of rising real wage rates underscores the flexibility and resilience of the U.S. economy. The chapter examines these extraordinary changes from an economic perspective.

Care and management of the home have always been important to society. One major reason that more women are able to enter the work force today is that household management requires less time than it did in the early 20th century. Previously, it required one full-time person (generally the woman) to perform necessary household tasks. Improvements in technology have increased the number of labor-saving devices in the home, and more goods that were formerly produced in the home can now be purchased outside it. Moreover, the decline in the birth rate has also reduced work demands in the home and provided more time for work in the market.

As demands on women in the household were falling, women's wages in the market were rising. The changes in technology that made labor-saving devices in the home widely available also altered the nature of market work and increased the returns to labor. Physical strength became less important in many jobs, service sector employment grew, and wages and salaries increased.

Changes in the household and the market meant that the wages women could command outside the home rose relative to the value of time spent in the home. This growing market opportunity encouraged women to enter the labor force. Real earnings of men increased throughout the 1950s and 1960s, at a time when married women were rapidly entering the labor force, implying that family standards of living would have risen even without the earnings of the wife. Thus, while higher real incomes for male wage earners meant less financial need for their wives to work, the attraction of higher wages and less need for women to work at home drew women into the labor market. In some years in the 1970s, however, real wages for both men and women fell. Then, many married women probably did enter the labor market to maintain family incomes. The 1980s have brought increases in both women's real earnings and women's earnings relative to men's, changes that further encouraged work in the marketplace.

The remainder of the chapter is divided into three sections. The first section describes the increase in women's labor force participation and the changes in their employment patterns. The second section discusses factors that affect occupational choice, and chronicles changes in the occupational distribution of employed women. The third section analyzes earnings differentials, and examines the pay gap between men and women.

## EMPLOYMENT

The percent of the U.S. labor force that is female has risen from 18 percent in 1900 to 29 percent in 1950 to 44 percent in 1986. Table 7–1 shows the rapid rise of women's participation in the labor force since the turn of the century. As women entered the labor force, the market responded and a variety of new opportunities were created. The market also accommodated the preferences of many of these women for part-time work or flexible scheduling of hours.

Dramatically increased participation of women in the labor market is not a phenomenon confined to the United States. A recent study of 12 major industrialized countries shows similar patterns of socioeconomic change: urbanization, decreasing birth rates, increasing female education, and the growth of the service sector.

But the U.S. economy displayed a far greater capacity than the economies of other industrialized countries to absorb additional workers and create new jobs. Between 1960 and 1984, job growth in the United States increased by an average of 2 percent per year, double the rate for Japan. Over the same time period, there was vir-

TABLE 7–1.—*Labor force participation rates of women, by age, 1890–1986*

[Percent]

| Year | Women 20–64 | | | All women | |
|---|---|---|---|---|---|
| | All | White | Black and other | 20–24 | 25–34 |
| 1890 | 17.4 | 14.9 | 38.4 | 30.2 | 16.8 |
| 1900 | 19.3 | 16.5 | 41.0 | 31.7 | 19.4 |
| 1920 | 22.9 | 20.7 | 43.1 | 37.5 | 23.7 |
| 1930 | 25.4 | 23.3 | 44.1 | 41.8 | 27.1 |
| 1940 | 29.4 | 27.9 | 42.9 | 45.6 | 33.3 |
| 1950 | 33.3 | 32.2 | 43.2 | 43.6 | 32.0 |
| 1960 | 42.3 | 40.9 | 54.0 | 46.1 | 36.0 |
| 1970 | 50.0 | 49.1 | 57.2 | 57.7 | 45.0 |
| 1980 | 60.8 | 60.5 | 62.8 | 68.9 | 65.5 |
| 1986 | 66.4 | 66.3 | 66.4 | 72.4 | 71.6 |

Source: There is some controversy over the Census counts of women workers in the 1890–1940 time period. Data here for 1890–1950 are from Bureau of the Census monograph, Gertrude Bancroft, *The American Labor Force*, New York, Wiley, 1958. Data for 1960–86 are from Department of Labor, Bureau of Labor Statistics.

tually no job growth in Great Britain or Italy, and employment in West Germany fell.

In recent years, a pattern of increased employment of married women with young children has emerged in most industrialized countries. As Table 7–2 shows for the United States, the historical pattern of married women staying home to care for children, especially small children, has changed considerably in recent decades. Women who maintain families alone have had high rates of market participation throughout the postwar period, and although participation rates for these mothers have grown, the major increase in female employment in recent decades has come from married women. The sharpest increases have been for wives with very young children. About 54 percent of wives with children under the age of 6 participate in the labor force. The rate for wives with infants is almost 50 percent, more than double the percentage in 1970.

TABLE 7–2.—*Labor force participation rates of women by age of youngest child, March of selected years, 1970–86*

[Percent]

| Presence and age of child | Wives, husband present | | | | Women maintaining families alone, 1986 |
|---|---|---|---|---|---|
| | 1970 | 1975 | 1980 | 1986 | |
| Total | 40.8 | 44.5 | 50.2 | 54.6 | 62.1 |
| With children under 18 years | 39.8 | 44.9 | 54.3 | 61.4 | 69.5 |
| Under 6 years | 30.3 | 36.8 | 45.3 | 53.9 | 57.9 |
| Under 3 years | 25.8 | 32.6 | 41.5 | 51.0 | 50.9 |
| 1 year and under | 24.0 | 30.8 | 39.0 | 49.8 | 44.7 |
| 3–5 years | 36.9 | 42.2 | 51.7 | 58.5 | 64.5 |
| 6–17 years | 49.2 | 52.4 | 62.0 | 68.5 | 76.8 |
| 6–13 years | 47.0 | 51.8 | 62.6 | 68.0 | 74.5 |

Source: Department of Labor, Bureau of Labor Statistics.

Although marital status and age of children are less important predictors of market participation than they were in the past, they still influence behavior, most notably for full-time employment. In monthly survey data for 1986, 36 percent of married women with children under 18 years of age worked full time, but 47 percent of widowed, divorced, separated, or never-married mothers with children in the same age group did so. The proportion of women who worked full time was lowest for those with very young children. Among married women with children aged 6 to 17, 45 percent work full time. But among those with children under 6, only one-third work full time.

Probably because of family responsibilities, more women than men work part time (fewer than 35 hours per week). Although the number of women who are working part time has increased, the proportion of the adult female labor force that wants part-time jobs has not changed since 1970. And, over this same time period, approximately one-third of all women who worked in a year worked part time. However, the percent of women with the strongest time commitment to the labor force (full-time and full-year) is rising, while the percent with the weakest time commitment to the labor force (part-time and part-year) is falling. In 1985, virtually half of women who worked in the market worked full time for the entire year, while only 12 percent worked part time for part of the year.

UNEMPLOYMENT

In the 1950s and 1960s, unemployment rates were higher for women than men, even though women tended to be employed in industries and occupations where layoffs were less common. Women's higher unemployment rates can be attributed primarily to their more frequent movement into and out of the labor force. Moreover, because men tend to work in industries that are more affected by business cycles, differences between male and female unemployment rates widened in upswings and narrowed during recessions. In the late 1960s, a period of generally low overall unemployment, the unemployment rate for women was about 70 percent greater than that for men. In the 1980s, however, overall rates of unemployment are higher than in the 1960s and male and female unemployment differences have narrowed considerably. In 1982 and 1983, the female unemployment rate fell below the male rate for the first time in the postwar period.

Seasonally adjusted unemployment rates were 6.6 percent for both men and women in December 1986. Equal male and female unemployment rates, however, reflect the outcome of two opposing forces: a higher proportion of female new entrants and reentrants, which in-

creases women's rates relative to those of men, and occupational and industrial employment patterns that lower women's unemployment rates relative to male rates.

### HOME WORK VERSUS MARKET WORK

Individuals tend to split their hours between home and market work such that an additional hour spent in each will furnish roughly equal benefits. Urban residence, fewer children, and labor-saving household appliances decrease the time required to produce a given level of benefits from work in the home, and thereby reduce the number of hours necessarily devoted to home work. More education and previous labor market experience raise market productivity and the value of market time, providing additional incentives for work outside the home.

The marginal rate at which income is taxed influences decisions about market work, nonmarket work, and leisure. Taxes create a differential between the individual return to an hour of market work (the after-tax wage) and the productive return to society (the before-tax wage). In 1980, the top marginal Federal tax rate on labor income was 50 percent, and in some special cases was even higher. With this marginal rate, individuals could have been considerably more productive in market than in nonmarket work, but would have been better off working an extra hour in the home than in the workplace because the output was not taxed. Under the Tax Reform Act of 1986, the top marginal rate will be 28 percent, although a surcharge on certain relatively high incomes will make it 33 percent. Therefore, the tax reforms that the Administration is implementing should reduce the disincentives against market work built into previous tax rates.

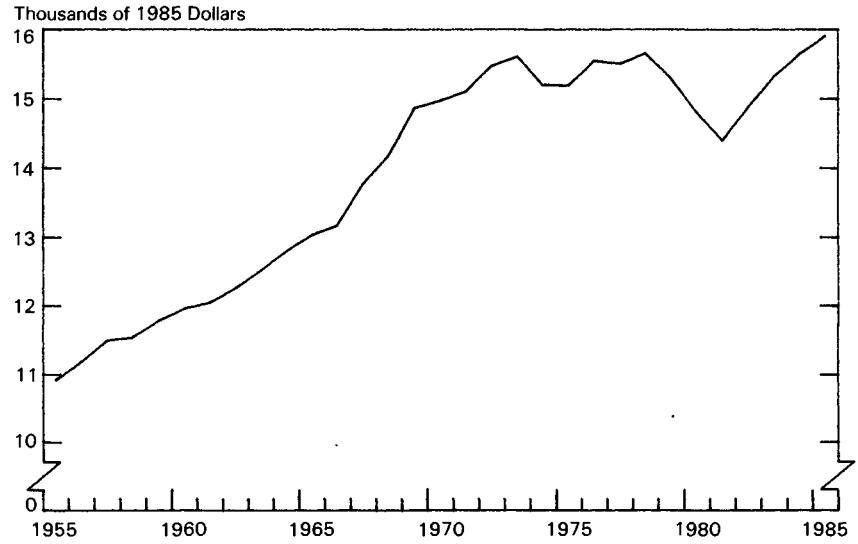
Although labor-saving devices played an important role in reducing the number of hours women spent doing housework in the 1940s and 1950s, working wives still spend substantial time doing housework. Survey estimates from the mid-1970s indicate that wives employed full time averaged 25 hours of work in the home and 39 hours of work in the market each week, while husbands employed full time averaged 13 hours of work in the home and 47 hours of work in the market. (Work in the market includes commuting time.) As women have increased their market work and reduced their nonmarket work over the past two decades, men have done the opposite. Between the mid-1970s and the early 1980s, men aged 25 to 44 cut their market work by 1 hour a week and increased their work in the home by almost 3 hours a week, while women in the same age group increased their market work by 4 hours and cut their work in the home by a little more than an hour.

*The Role of Wages in Increased Participation*

Researchers estimate that over half the growth in female employment between 1950 and 1980 was in response to the real wage increases illustrated in Chart 7-1. Real wage growth affected market participation both directly, through the attraction of more income, and indirectly, through reductions in the number of births. The indirect effects were estimated to be as large as the direct effects. The peak of the postwar baby boom in 1957 was 3.8 births per woman, but over the past decade the rate has been about 1.8 births per woman.

Chart 7-1

Women's Real Annual Earnings




Note.—Data are median wage or salary income of year-round, full-time, civilian workers (14 years and over through 1978 and 15 years and over after 1978). Self-employed persons are excluded. Data beginning 1975 are not strictly comparable with earlier figures.
Data are converted to 1985 dollars using the consumer price index for all urban consumers.

Sources: Department of Commerce, Department of Labor, and Council of Economic Advisers.

The rest of the growth in female employment is related to factors such as decreases in the time required for household work and changes in husbands' income. Between 1973 and 1981, husbands' real earnings fell about 10 percent and, in response, wives probably increased their work effort. In addition, as work expectations generally increased, labor supply decisions were probably based more on long-term individual wage expectations than on year-to-year changes in wages. Finally, some of the growth in women's participa-

tion can be attributed to the fact that proportionately more women were single, divorced, or widowed.

*The Role of Expectations*

Along with changes in labor market opportunities and in wages, people's attitudes about work have changed greatly. Questions concerning women working appeared in at least six polls in the 1930s, and fewer than 25 percent of the respondents in any of the polls approved of married women working outside the home. In a 1960 national survey, slightly more than one-third of husbands had either favorable or qualifiedly favorable attitudes toward their wives working. By the 1980s, however, the overwhelming proportion—nearly two-thirds—of both men and women reported that it is less important for a wife to help her husband's career than to have one of her own.

Table 7-3 shows how young women's expectations about future work in the market changed between 1968 and 1979. In 1985, women surveyed in 1968 would have been between 31 and 41 years old; thus, the table also shows 1985 labor force participation rates for women in these age groups. With the dramatic increase in labor force participation rates, more women were working than had expected to work. The differences between expectations and actual later behavior were considerably greater for white than for black women, probably because the increase in labor force participation has been so much greater for white women.

TABLE 7-3.—*Young women's work expectations for age 35: Trends and current participation rates*

[Percent]

| Race | Percent of young women expecting to work at age 35 | | 1985 labor force participation rate by age | |
|---|---|---|---|---|
| | 1968 sample | 1979 sample | 25–34 | 35–44 |
| White | 27.5 | 71.7 | 70.9 | 71.4 |
| Black | 55.6 | 85.9 | 72.4 | 74.8 |

Sources: The 1968 data are from the 1968 National Longitudinal Survey of 5,000 women aged 14–24 years. The 1979 data are from the 1979 National Longitudinal Survey of Youth Labor Market Experience, a survey of over 12,000 young men and women aged 14–21 years (over 6,000 women). The tabulations exclude those answering "don't know" or "other." All survey data were weighted to a nationally representative sample. The 1985 labor force participation rates are from Department of Labor, Bureau of Labor Statistics.

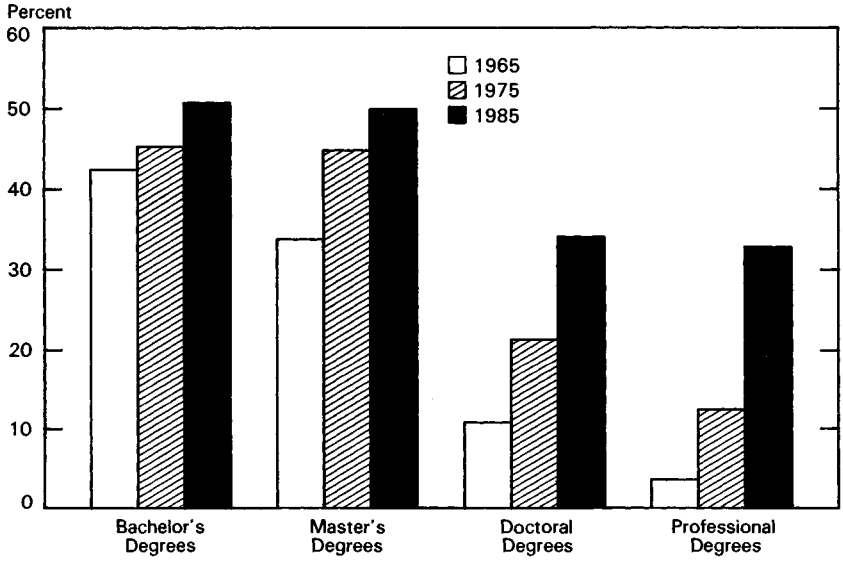
What and how long women study, what jobs they take, and what occupations they choose depend, in part, upon how long and remunerative they expect their careers to be. The dramatic increases in women's employment were unanticipated. Not surprisingly, many women seriously underestimated how many years they would work in the marketplace. As a result, women, on average, were less trained for labor market activities than they would have been had they anticipated their future work histories. Today, young women expect to

spend a much greater fraction of their adult lives working in the labor market than their mothers did.

Young women are changing their training and initial job plans as they anticipate greater commitment to the labor force. This is evident in the increased proportion going to college. As Chart 7-2 illustrates, women now receive about half of the bachelor's and master's and more than one-third of the doctoral degrees. The sharpest growth in the past decade has been in professional degrees. In 1985, women received 30 percent of the degrees in medicine (up from 13 percent in 1975), 21 percent in dentistry (up from 3 percent in 1975), and 38 percent in law (up from 15 percent in 1975).

Chart 7-2

Percent of Earned Degrees Received by Women




Note.—Data are for 12-month period ending June 30 of year shown. Data for professional degrees are for first professional degrees, and are primarily in law, medicine, and dentistry.

Source: Department of Education.

Women's college major choices are converging toward those of men. In 1960, 46 percent of degrees awarded to women were in education. Since then, the increased commitment of women to the labor force has led them to choose a greater variety of college majors. In the fall of 1985, only 10 percent of women beginning college intended to major in education, while 28 percent opted for business, making it the most popular major for women as well as for men.

Roughly equal numbers of male and female college graduates now major in the arts and humanities, as well as in the biological sciences and management. Although considerably fewer women major in education than before, 76 percent of education majors are women. Women represent only 13 percent of engineering majors, but a decade earlier they represented a mere 2 percent.

## OCCUPATIONAL CHOICE

Work performed in the home would, under paid circumstances, be categorized in the service sector. Women made an occupational shift during the postwar period, as many left full-time homemaking. In terms of the proportions of the labor market involved, the shift away from homemaking is greater than the migration of the workforce out of agriculture that occurred earlier in this century. Both structural shifts in employment were massive and, again, the market-oriented U.S. economy accommodated them in an environment of generally rising wages.

Occupational choices seem to be driven not only by expectations regarding lifetime hours of work, but also by tradeoffs among the characteristics of different occupations. For example, individuals balance wages against job characteristics such as riskiness, effort, work environment, and fringe benefits. Characteristics such as amount of training required, usual hours, and rate of skill atrophy are also important. Women who expect to have long and continuous work careers make choices different from those who expect more disruptions in their labor market work because of family demands. Women's divergent goals are reflected in the differing characteristics of the occupations they choose. And the market provides individuals with the opportunity to choose among occupations with very different features.

The amount and type of training women acquire signal expectations for lifetime hours of work. Women who plan continuous careers are more likely to choose apprenticeship training or make specific investments in schooling as preparation for a particular occupation. The amount of additional training undertaken while employed also depends on the expected length of labor market participation, as women who expect lengthy and continuous careers are more likely to undertake career investments that enhance future earnings.

The type of training also affects working wives' occupational choices. Some couples invest more heavily in the career of the husband than of the wife; if the wife chooses to work, she must find employment wherever the family locates and is thus less likely to acquire job-specific or nontransferable skills. Similarly, occupations in which

skills deteriorate or require knowledge of a rapidly changing body of information, may not be good choices for women who plan substantial interruptions in their labor market careers for marriage or childbearing. The cost of taking time off is much greater in engineering than in editing, because the decay of knowledge is much greater.

Job characteristics valued by many, especially women with children, are work-time flexibility and shorter work hours. Women have long dominated elementary and secondary school teaching, occupations that allowed them to spend summers and holidays with family. Workers in the clerical fields, where women have often been employed full time throughout the year, generally work fewer hours per week than the average full-time worker.

Physical strength, access to financing, societal expectations, and legal barriers constrain occupational choices for both men and women. Barriers to entry for women have included Federal regulations prohibiting certain work in the home, State "protective" legislation barring entry into occupations requiring heavy or dangerous work, certain military occupations (because of congressional bans on women in combat), and employer or union discrimination. Employer or union discrimination on the basis of sex, race, or age is now against the law, and virtually all State "protective" legislation has been repealed. Federal regulations still prohibit the manufacture of some types of goods within the home. The Department of Labor in 1984 partially lifted the ban and in 1986 proposed further liberalization of these rules.

Some argue that women's occupational choices have also been affected by what is broadly called sex-stereotyping of occupations. Although occupational choices of women are changing, most employed women are still found in a relatively small cluster of occupations. Women have often chosen these occupations because they require general skills that were easily transferable and could be used in the home, and because the occupations permitted the flexibility in hours or labor force discontinuity that many women wanted. Few legally valid restrictions to occupational choice remain. And as women raise their expectations about their work time in the market, they are increasingly entering occupations considered nontraditional.

### OCCUPATIONAL DISTRIBUTIONS

Women's tendency to choose clerical, service, and social service fields over crafts and manufacturing is a phenomenon not confined to the United States. A study of Great Britain, Sweden, the United States, and West Germany in the 1960s and 1970s indicated that these patterns were strongest in Sweden. Gender differences in occupational choice narrowed only slightly in the United States between

1950 and 1970. During the 1970s and increasingly in the 1980s, women have been choosing a greater variety of occupations. Table 7–4 shows the percentage of women in the labor force, in the six broad census occupational groupings, and in a variety of more detailed occupations. Women are increasing their participation in highly skilled occupations that traditionally had been almost exclusively male. For example, in 1970, when 38 percent of the total workforce was female, only 5 percent of lawyers and judges were female. By 1986, women constituted 45 percent of employed workers under 35 years of age and 29 percent of lawyers and judges.

TABLE 7–4.—*Percent female in selected occupations, 1970, 1980, and 1986*

[Female workers as percent of total workers]

| Occupation | 1970 | 1980 | 1986 | |
|---|---|---|---|---|
| | | | All | Under 35 years |
| Percent of employment that is female | 38 | 43 | 44 | 45 |
| Managerial and professional | 34 | 41 | 43 | 49 |
| Mathematical and computer scientists | 17 | 26 | 36 | 41 |
| Natural scientists | 14 | 20 | 23 | 28 |
| Health diagnosing occupations | 8 | 12 | 15 | 24 |
| Physicians | 10 | 13 | 18 | (1) |
| Health assessment and treating occupations | 85 | 86 | 85 | 85 |
| Registered nurses | 97 | 96 | 94 | (1) |
| Lawyers and judges | 5 | 14 | 18 | 29 |
| Technical, sales, and administrative support | 59 | 64 | 65 | 66 |
| Technicians and related support | 34 | 44 | 47 | 48 |
| Engineering and related technologists and technicians | 9 | 17 | 18 | 22 |
| Sales occupations | 41 | 49 | 48 | 54 |
| Administrative support, including clerical | 73 | 77 | 80 | 80 |
| Secretaries, stenographers, and typists | 97 | 98 | 98 | 98 |
| Mail and message distributing | 25 | 30 | 34 | 40 |
| Service occupations | 60 | 59 | 61 | 58 |
| Sheriffs, bailiffs, other law enforcement officers | 6 | 13 | 14 | (1) |
| Bartenders | 21 | 44 | 49 | (1) |
| Waiters and waitresses | 91 | 88 | 85 | (1) |
| Cooks, except short-order | 67 | 57 | 51 | (1) |
| Precision production, craft, and repair | 7 | 8 | 9 | 8 |
| Precision woodworking occupations | 8 | 14 | 17 | (1) |
| Operators, fabricators, and laborers | 26 | 27 | 25 | 22 |
| Motor vehicle operators | 5 | 9 | 11 | 10 |
| Bus drivers | 28 | 49 | 50 | (1) |
| Printing machine operators | 14 | 27 | 28 | (1) |
| Farming, forestry, and fishing | 9 | 15 | 16 | 14 |

[1] Not available.

Note.—All data are based on the 1980 Census job classification system.

Sources: Department of Commerce (Bureau of the Census) and Department of Labor (Bureau of Labor Statistics).

Women are also expanding their roles as entrepreneurs. Female-operated nonfarm sole proprietorships have grown about twice as rapidly as all such proprietorships since 1977. In 1983, female entrepreneurs operated 28 percent of nonfarm sole proprietorships, up sharply from earlier periods. Most of these businesses are in areas such as retail trade, insurance, and real estate, but an increasing number are in areas considered nontraditional.

## EARNINGS DIFFERENTIALS

Differences in earnings arise partly because of differences in demand for the goods and services provided by particular jobs, and partly because of differences in the number of qualified individuals willing to take those jobs. Different skills that stem from past training, work histories, motivation, and talent all contribute to variation in earnings. Continuous work histories and longer job tenures with particular employers lead to higher earnings. Jobs that begin with comparatively more on-the-job training also pay less at first than jobs that offer no training; individuals seek jobs with training because of the potential for future wage growth.

Within race and sex categories, individual characteristics (hours of work, education, age, union membership, urban location, etc.) explain some of the variation in earnings. Adding those factors to other readily measured characteristics—such as actual work experience, interruptions in work experience, tenure with employer, and occupation, job, or industry characteristics—explains about half of the earnings variation.

The average employed man has more work experience, fewer interruptions in that work experience, and longer tenure with his current employer than does his female counterpart of a comparable age. However, these differences are now beginning to narrow. For example, in 1963, women's median years of tenure with their current employer were 2.7 years less than men's; 20 years later, in 1983, the difference was 1.4 years. For women 25 to 34 years old, the tenure differences were 1.5 years and 0.6 years respectively.

Just as unexplained earnings differentials exist among men or among women whose readily measured characteristics are identical, unexplained earnings differentials also exist between men and women. These pay differences can result from the failure to measure all of the gender differences that affect market productivity, or from discrimination, or from both.

One example of a characteristic that is not generally measurable is anticipated future market work time. Such information, however, is available from the 1968 survey of young women discussed previously in this chapter. Because the survey was longitudinal and the same basic question was asked each year, it was possible to compare the earnings of women who had consistently expected to be working at age 35 with those who had not. Recent analysis of these data shows that the earnings in 1980 of women who had answered the question in the affirmative throughout the first 7 years of the survey (1968 through 1975) were almost 30 percent higher than the earnings of women who had not, but who were comparable in other respects. No

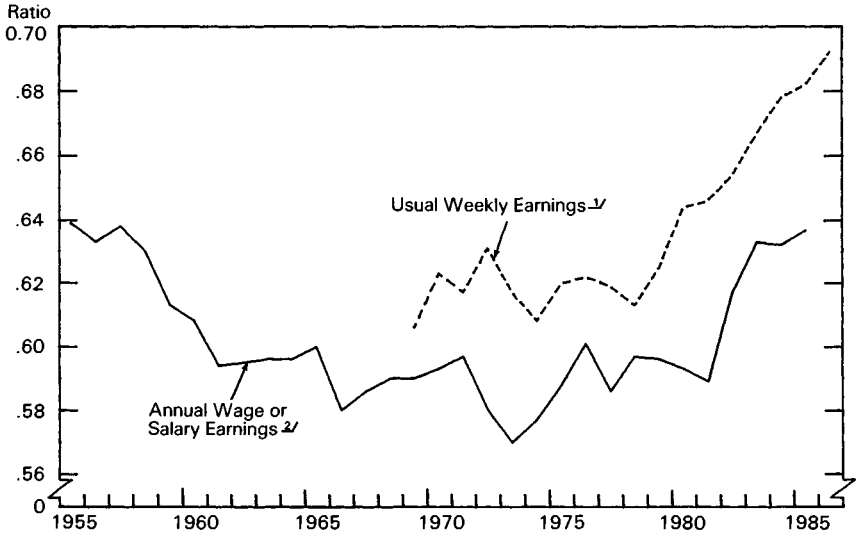
doubt many of those who expected to be working continuously chose different occupations and made greater investments in their skills and careers than those who believed otherwise.

TRENDS IN THE PAY GAP

Two data series, illustrated in Chart 7-3, are often used to compare male and female earnings. The first series, the ratio of female to male median wage or salary income for year-round, full-time workers, was 58 percent in 1939 (not shown), rose to 64 percent in the mid-1950s and then fell to 58 percent in the mid-1960s. From the mid-1960s to 1981, it drifted in a narrow range. Since 1981, it has begun to climb, reaching 64 percent in 1985. The ratio for the second data series, median usual weekly earnings of full-time wage and salary workers, shows a similar pattern for the available time period. Since 1979, it has risen steadily, reaching 69 percent in 1986. Although both series are for full-time workers, gender differences occur in hours worked even for full-time workers. In 1985, full-time women workers averaged 6 percent fewer hours than full-time male workers.

Chart 7-3

Ratio of Female to Male Earnings for Full-Time Workers




1/ Median usual weekly earnings of all full-time workers, 16 years and over. Excludes self-employed persons whose businesses are incorporated. For details on data consistency, see Bureau of Labor Statistics Bulletin 2239, February 1986.

2/ Median wage or salary income of year-round, full-time, civilian workers (14 years and over through 1978 and 15 years and over after 1978). Self-employed persons are excluded. Data beginning 1975 are not strictly comparable with earlier data.

Sources: Department of Commerce, Department of Labor, and Council of Economic Advisers.

Recent research has examined the reasons why the ratio of median earnings did not rise until the 1980s. The 1950s, 1960s, and 1970s were decades of increasing female participation in the labor force. The sharp increases in market participation by women with little previous market work experience depressed the average experience level of women workers for much of the postwar period, widening the experience gap between the typical male and female worker. A modest reduction in the experience gap occurred in the 1970s, particularly among younger workers, but by 1980, a typical employed female had only a few months more experience than in 1940. Education played a somewhat similar role as the schooling levels of male workers increased relative to female workers in the 1950s and 1960s, stimulated, in part, by the GI bill. As the work experience of women relative to men as well as the educational differential between working men and women widened, the median earnings ratio fell. Because both experience and educational differences are now narrowing, the ratio is rising, as Chart 7–3 shows. And the underlying trends in women's work commitments discussed in this chapter suggest that the ratio should continue to rise.

The pay gap is smaller for younger workers. Table 7–5 shows the ratio of female to male earnings for full-time, year-round workers in different age groups. Earnings ratios are not only higher, but are increasing rapidly for younger workers.

TABLE 7–5.—*Earnings of females as percent of earnings of males, by age, 1979, 1982, and 1985*

[Percent]

| Year | Age of workers | | | |
|---|---|---|---|---|
| | 20–24 years | 25–34 years | 35–44 years | 45–54 years |
| 1979 | 76.7 | 67.5 | 58.2 | 57.0 |
| 1982 | 82.4 | 72.0 | 61.1 | 60.0 |
| 1985 | 85.7 | 75.1 | 63.2 | 59.6 |

Note.—Data relate to median usual weekly earnings of full-time wage and salary workers.
Source: Department of Labor, Bureau of Labor Statistics.

As mentioned above, employed men and women differ in many of the basic characteristics that influence earnings, such as labor market experience and employee tenure. When these differences in characteristics are accounted for, almost half of the gap between men and women is explained. In general, studies that sample only younger workers or those in similar jobs find smaller pay gaps. Some recent research, incorporating work expectations of men and women into an analysis of the pay gap, suggests that as much as 90 percent of the differences in male and female earnings can be explained when

gender differences in work expectations are included in the calculations. Accurate measurement of work expectations, however, is extremely difficult, and these results should be considered tentative.

*Discrimination*

Some observers attribute all, or almost all, of the unexplained portion of the wage gap between women and men to discrimination. Other observers attribute all, or almost all, to unmeasured or difficult-to-measure differences in characteristics between men and women. There is no consensus on the magnitude of discrimination. Discrimination is illegal. The Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964 contain remedies for discrimination. The Equal Pay Act requires equal pay for equal work and thus outlaws gender wage discrimination. The 1964 legislation prohibits gender barriers to entry, and thus outlaws discrimination in hiring or promotion.

Discrimination also reduces gross national product. Resources are allocated most efficiently when prices are determined by the free interplay of supply and demand. Barriers to entry based upon characteristics such as sex, age, or race, impede the workings of the market, reduce allocative efficiency, and retard economic growth. These barriers are also costly to business. A firm that hires or promotes a less competent man over a more competent woman has higher costs of production than one that hires or promotes the most competent person. Barriers may include unequal educational opportunity or occupational, union, and trade association restrictions. Breaking down barriers that remain and promoting equal opportunity are commitments of this Administration.

*The Earnings of Black Women*

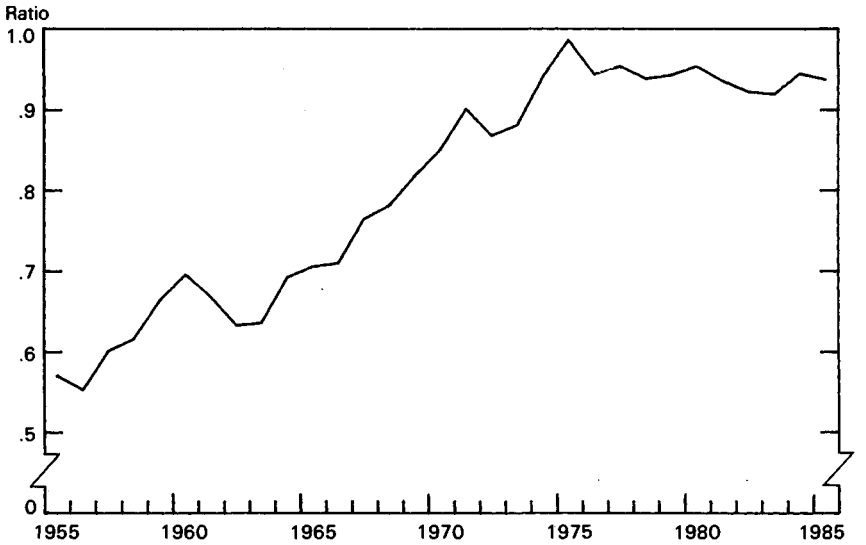
The relative constancy of the ratio of median earnings for all full-time workers disguises the sharp increases in earnings experienced by black women in the postwar period. Since black women's earnings are not available in separate series until the late 1960s, Chart 7–4 illustrates the earnings ratio of black and other women to white women from the mid-1950s to the present. (In years when black and other female earnings and black earnings are both available, the two series are virtually identical.) While Chart 7–1 showed sharp real increases in the earnings of all women, Chart 7–4 shows that the earnings of women in the black and other category were growing considerably faster than the earnings of all women.

There are at least three important reasons for this extraordinary increase in black women's earnings. First, black women had high labor force participation rates throughout the postwar period, and the increases in their participation were much smaller than those for white women. The median work experience of employed black

women grew during the period because it was not diluted by a high proportion of new entrants, and this contributed to the growth in black women's earnings.

Chart 7-4

Ratio of Black and Other Women's Earnings to White Women's Earnings




Note.—Data are median wage or salary income of year-round, full-time, civilian workers (14 years and over through 1978 and 15 years and over after 1978). Self-employed persons are excluded. Black women constitute the great majority of the category black and other women.
Data beginning 1975 are not strictly comparable with earlier data.

Sources: Department of Commerce and Council of Economic Advisers.

Second, and more important, schooling levels of black women workers increased sharply throughout the period. In 1940, only about 7 percent of black women over the age of 25 had completed high school. By 1960, the percent had almost tripled and today it is about 60 percent. Finally, in the early postwar period, a great majority of employed black women worked in only two occupations, private household worker and farm laborer. While in 1940 more than 70 percent of black working women were in these two occupations, by 1960 the fraction had fallen to below 40 percent. By 1970, the fraction was below 20 percent; today it is about 5 percent.

The increase in black female education, and the changes in their occupational distribution in the past 40 years have been dramatic. Real wage changes for black women have been larger than those for any other group. In 1939, the earnings ratio depicted in Chart 7–4

was 0.38; by 1960, it was 0.70; and since the mid-1970s, the ratio has fluctuated between 92 and 99 percent.

The growth in the real earnings of black and other women was as rapid in the late 1950s and the early 1960s as it has been since 1964. The increases in black women's schooling, and their movement out of the occupations of private household worker and farm laborer, contributed significantly to the growth in these earnings.

## CONCLUSION

This chapter tells two stories. The first is about women and their shift from work in the home to work in the market. The number of women in the labor force has tripled, women's real earnings are rising, and women are increasingly entering higher paid occupations. Women have successfully integrated work in the market with work in the home, making important contributions to both their family's income and the Nation's output.

The second story, which underlies the story of women's economic achievements, is about the adaptability and flexibility of U.S. labor markets in accommodating such a major structural change. Not only has the economy created over 30 million additional jobs filled by women since World War II, but it has also created jobs that interest and attract women: in business and the professions, science and technology, and the service sector. The market produced these jobs while still providing rising real wages and incomes for both men and women.

The success of the responsive and flexible U.S. labor markets has not been confined to adapting to increasing numbers of women. Last year the Council of Economic Advisers chronicled the labor market success of immigrants. Since 1950, the United States has absorbed about 13 million legal immigrants. During the same time, 4 million workers left farming and found other jobs. The market provided nonfarm jobs for those who left agriculture, as well as jobs for immigrants who often knew neither the English language nor American customs. It did this without major government programs to force accommodation.

The central conclusion that can be drawn from this chapter, as from many other sections of this *Report*, is clear. The success of the markets is reflected in their adaptability. In the labor market, as with all markets, it is important to retain this ability to respond to change. Regulations to mandate wages or benefits would, even if enacted with the best of intentions, restrict this flexibility and inhibit the ability of markets to adapt. In contrast, free and flexible labor markets

provide employment opportunities for new workers, even in the face of enormous and rapid structural change.

As this *Report* demonstrates, the success of the U.S. economy in creating employment opportunities, increasing national income, and raising real living standards begins with reliance upon private enterprise and a competitive-market system. The incentives for individual effort and initiative generated by this system provide the essential stimulus for economic progress. By facilitating the operation of this system, government policy most effectively contributes to the goals specified 40 years ago in the Employment Act of 1946: ". . . maximum employment, production and purchasing power."