9TH EDITION

CONTEMPORARY ECONOMIC PROBLEMS AND ISSUES

HAILSTONES
MASTRIANNA

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PREFACE

Students who successfully complete a good introductory course in economics develop an understanding of the American economic system and of how to use basic tools and techniques in economic thinking. However, because of the comprehensive scope of textbooks for principles of economics courses, most of them can devote only a relatively small section to socioeconomic problems and issues. In many textbooks, treatment of such issues is confined to mini-readings or concluding comments within each chapter. To the students, these abbreviated applications of theories to practical problems often seem superficial and meaningless. Because most students' formal education in economics begins and ends with the principles course, all too often the unfortunate result is a lack of insight into the major problems of the day.

The basic goal of this textbook is to meet this need by presenting 16 major economic issues in a manner that students will find both interesting and enlightening. Our approach is to present the chronological development or evolution of each problem, along with the current facts necessary for accurate understanding of the topic. The text contains an economic analysis of the

alternate solutions that have been suggested, but because most of the topics represent on-going problems, students can develop their own opinions about what should be done. After marshalling the facts, analyzing the alternatives, and weighing the merits of proposed solutions, students can decide on appropriate solutions to the various problems and issues.

Those familiar with the previous edition of this textbook should note that a new chapter has been added to this ninth edition. Chapter 16, "Europe 1992—A Boon or a Bane to the United States?" covers the chronological development, along with the effect on the United States, of the European Community and the finalization of a single European market. The authors wish to thank Dr. William Jilling of the University of South Carolina-Spartanburg and Dr. Adolfo Benavides of La Grange College for their reviews of the manuscript for this section.

The other 15 chapters have been extensively revised and updated to give students the most current information on both general and specific problems and issues. Chapter 1, for example, contains new data on poverty in the United States. Chapter 5 incorporates the 1989 legislation for solving the S&L crisis. Chapter 9 considers the tax effects of the catastrophic health-care plan that was scheduled to commence in January 1990. And Chapter 14 spells out President Bush's plan for dealing with Third World debt.

An Instructor's Manual is also available with this ninth edition, providing approximately 20 questions for each textbook chapter that instructors might want to use for homework assignments or testing purposes.

In each chapter, students will recognize the application of important economics concepts, such as supply and demand, opportunity cost, and cost-benefit analysis. To avoid unnecessary repetition, graphic models are used selectively, in the belief that students can readily apply these tools in chapters where such concepts are described. The main thrust of each chapter, however, is to emphasize the trade-offs individuals and society as a whole must make to achieve a desired end.

In evaluating economic policy, students should keep in mind the political realities of a democratic society such as ours. Frequently it may appear that solutions proposed by economists are both efficient and equitable and thus worthy of implementation. But public policy is largely determined by elected representatives who, in addition to seeking efficiency and equity in our economic system, are also very much concerned with the basic task of being reelected. By keeping this in mind, students can better understand why a significant number of public programs may provide substantial benefits in the present but even greater costs in the future.

Feedback from professors who have used previous editions indicates a variety of ways in which this textbook can be effectively utilized. In many cases, the book is used as a supplementary text for a full-year principles course, while in other cases, it is used for a one-term problems and issues course. In still other cases, the book serves as the basic learning tool for upper-division

courses in current economic problems and issues, which place greater emphasis on student research and on written or verbal presentations about particular aspects of a given problem.

The authors are again indebted to the many individuals who helped in the development of certain chapters of this book. Three members of the Economics Department at Xavier University, Cincinnati, Ohio, deserve special mention. We are particularly grateful to Dr. David Weinberg for accepting the responsibility of researching and writing the chapter on natural resources, to Dr. Harold Bryant for extensive assistance in researching and writing the chapter on Third World debt, and to Dr. John Rothwell for writing the chapter on banking regulation. An expression of thanks is also due to Izola White, Irene Browne, and Barbara Banjak for typing various parts of the manuscript.

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Dr. Hailstones has lectured throughout the United States and abroad. He was a member of the Boards of Directors of the Clopay Corporation; Gradison Cash Reserves, Inc.; The Ohio National Fund; and the Student Loan Funding Corp. He has been an economic consultant to many companies, both large and small. In addition to having written numerous articles for academic journals and trade periodicals, Dr. Hailstones has written or co-authored a number of college textbooks. His current texts include ones on introductory, managerial, and supply-side economics.

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Dr. Mastrianna has been a visiting professor at a number of universities. In addition, he has conducted workshops and been a featured speaker for many government, business, professional, and civic groups. He currently serves on the Board of Directors of the Union Central Life Insurance Company, as well as numerous other boards and councils. As founder of his own consulting firm, he has engaged in extensive work involving economic evaluations of businesses and human capital. Dr. Mastrianna has co-authored textbooks covering a wide range of economic topics. He has also served as consulting editor and reviewer of several others.

CONTENTS

CONTEMPORARY ECONOMIC PROBLEMS AND ISSUES

1

UNEMPLOYMENT

CAN FULL EMPLOYMENT BE MAINTAINED?

Presidential commissions, Congressional committees, business organizations, private economic groups, labor unions, and statutory law have all set forth domestic goals for the U.S. economy. The three most prominent goals are full employment, economic growth, and stable prices.

Serious unemployment must be avoided because of its economic consequence for the total economy and the hardship it brings to individuals and families. The double-digit levels of unemployment associated with the recession of 1982 and carrying over into mid-1983 were the worst since the Great Depression when unemployment reached 25 percent. These high levels exacerbated the public's strong feeling about unemployment.

Since the end of World War II the American economy has experienced intermittent periods of full employment. But even during periods of prosperity, unemployment has stayed at undesirable levels. After a $3\frac{1}{2}$-year period of full employment in the late 1960s, persistent unemployment recurred in 1970 and averaged between 5 and 6 percent in 1971 and 1972. It eased below 5 percent in 1973, but was aggravated by the recession of 1974–1975 and reached 9.2

percent in the spring of 1975. During the economic recovery, unemployment dropped to 5.8 percent by 1979. With the recession of 1980, however, unemployment rose to over 8 percent toward the end of 1981. It then peaked at 10.7 percent in December 1982 and remained at double-digit levels until June 1983. By December 1985 it was down to 6.9 percent. But by mid-1986 it was 7.3 percent. With continued economic expansion it fell to 5.0 percent by March 1989. During the near eight-year expansion from 1982 into 1990, the economy generated 19 million new jobs.

The problem, then, is that in spite of highly prosperous conditions and substantial growth of the economy, the U.S. has had substantial unemployment for many years. Naturally, questions arise. What do we mean by full employment? Why have we not had full employment? How serious is unemployment? Who are the unemployed? Who are the hard-core unemployed? How does unemployment in the U.S. compare with that in other nations? Is anything being done about the problem? What is the outlook for the future? In order to understand the problem of unemployment, it is necessary to analyze the structure, size, and composition of the American labor force.

THE LABOR FORCE

In January 1990, the total population in the United States was 250.0 million. Of this total, 189.0 million were in the category known as the *noninstitutional population*; that is, all persons 16 years of age or older, including members of the resident armed services, but excluding persons in institutions and the armed forces overseas. In January 1990, of the noninstitutional population, 126.1 million were in the *total labor force*, which includes those members of the noninstitutional population who are working or looking for work. Thus, the total labor force includes the unemployed as well as the employed, proprietors, the self-employed, and members of the resident armed forces. The labor force, however, excludes all persons engaged exclusively in housework in their homes or attending school. Students, for example, are not members of the labor force unless they are working in addition to attending school. If they work or look for work during the summer vacation period, however, they become members of the labor force. Likewise, when they graduate, they generally become members of the labor force.

The Civilian Labor Force

The *civilian labor force* consists of all persons in the total labor force except members of the resident armed services. Because there were 1.7 million persons in the resident armed services as of January 1990, the civilian labor force amounted to 124.4 million. Of the total labor force, 6.5 million, or 5.2

percent, were unemployed. The *unemployed labor force* includes all persons in the civilian labor force seeking work.

Employment and Unemployment

The *employed labor force* is the difference between the total labor force and the unemployed. It comprises all employed workers, including part-time employees and persons who did not work at all during the census week because of illness, bad weather, vacation, or labor disputes, but who had a job or business. In January 1990, the number employed was 117.9 million. Of this total, 3.1 million were in agricultural work and 114.8 were in nonagricultural employment.

In 1990, 62.9 million persons in the noninstitutional population were not in the total labor force. Of this group, homemakers accounted for 26 million and students for 8.7 million. Another 3.5 million stated that they were unable to work. The remainder, 24.7 million, consisted of individuals who had retired, did not want to work, did not have to work, and did not work for other reasons. A breakdown of the populations and the labor force is shown in Table 1-1.

According to payrolls the bulk of the labor force is engaged in nonagricultural employment. The largest category, services, has 27.6 million workers. The second largest number, 26.1 million, works in wholesale and retail trade. Manufacturing accounts for another 19.4 million workers, and government for 17.8 million workers, of whom 14.8 million work for state and local governments. Table 1-2 shows the sources of nonagricultural employment. It is useful

TABLE 1-1

Population and Labor Force, January 1990

Category	Millions
Total population	250.0
Noninstitutional population	189.0
Total labor force	126.1
Resident armed forces	1.7
Total civilian labor force	124.4
Unemployed labor force	6.5
Employed labor force	117.9
Agricultural employment	3.1
Nonagricultural employment	114.8
Persons not in the labor force	62.9
Keeping house	24.1
In school	8.7
Unable to work	3.5
Other reasons	24.7

SOURCE: *Employment and Earnings* (February 1990).

TABLE 1-2

Employment in Nonagricultural Payrolls
by Industry Division, January 1990

Industry	Millions	Percentage
Goods-producing industries	25.5	23.2
Manufacturing	19.4	17.7
Mining	0.7	0.6
Construction	5.4	4.9
Service-producing industries	84.3	76.8
Transportation and public utilities	5.9	5.4
Trade (wholesale and retail)	26.1	23.8
Finance, insurance, and real estate	6.9	6.3
Services	27.6	25.1
Government (federal, state, and local)	17.8	16.2
Total nonagricultural employment[a]	109.8	100.0

[a]This total is not comparable with the total nonagricultural labor force reported in Table 1-1, which includes proprietors, self-employed persons, domestic servants, and unpaid family workers. Table 1-1 also counts persons as employed when they are not at work because of industrial disputes, bad weather, and the like. Finally, Table 1-1 is based on a sample of the working-age population; Table 1-2 is based on reports from employers.

SOURCE: *Employment and Earnings* (February 1990).

to note that 76.8 percent of today's workers are employed in service-producing industries, compared to only 23.2 percent in goods-producing industries.

Labor Force Participation Rate

The *labor force participation rate* is the ratio of the labor force to the population. It can be calculated as a percentage of either the total population or the noninstitutional population. The labor force has been growing in size because both the population and the labor force participation rate have been increasing over the past few decades. Since 1950, the percentage of the noninstitutional population in the labor force has been between 59 and 64 percent. The labor force participation rate compared to the total population has risen from about 40 to 50.4 percent, as shown in Table 1-3. The participation rate jumped noticeably in the 1970s and 1980s due to the entry of the large number of women into the labor force. The fact that the total labor force participation rate changes over the years indicates that the labor force has some degree of elasticity.

Although the size and participation rate of the labor force also fluctuate annually, they have seasonal peaks and troughs. Consequently, for purpose of analysis, actual labor-force figures are usually adjusted for seasonal changes. For example, it is a well-established pattern for the size and participation rate

TABLE 1-3

Labor Force as a Percentage of Total Population

Year	Total Population (in millions)	Total Labor Force (in millions)	Total Labor Force Participation Rate (%)
1950	152	64.0	42.1
1955	166	68.0	41.0
1960	181	72.0	39.9
1965	195	77.0	39.6
1970	205	86.0	42.0
1975	214	97.0	45.3
1980	227	108.0	47.8
1985	239	117.0	49.0
1990	250	126.1	50.4

SOURCE: *Employment and Earnings* (February 1990).

of the labor force to increase in November and December due to the Christmas shopping rush. These seasonal changes, however, are not always evident in total labor-force figures because the cyclical movements are superimposed on seasonal variations. Seasonally adjusted data are necessary, therefore, for a proper interpretation of what is happening both to the size and participation rate of the labor force and to levels of employment and unemployment. Seasonally adjusted figures show what is happening to the labor force exclusive of the seasonal changes that are taking place. Table 1-4 presents seasonally adjusted labor force and employment figures.

Age and Sex of Civilian Labor Force

Table 1-5 shows that the civilian labor force consists of 7.1 million people aged 16–19, 87.4 million aged 24–54, and 3.4 million aged 65 or older. Woman comprise 45 percent of the civilian labor force.

Although not shown in the table, of the total 47.3 million women in the civilian labor force, approximately 63 percent are married. Of the married women in the labor force, 88 percent of them have husbands who are working.

THE MEANING OF FULL EMPLOYMENT

The term full employment does not mean a job for everyone. Many people are too young to work; others are too old. Some do not want to work; others are physically or mentally incapable of doing so. For example, at the beginning of 1990 about 26 million persons were too busy with housekeeping chores to enter

TABLE 1-4

Status of the Labor Force, 1980–1990
(Thousands of persons 16 years of age and older, except where noted)

Year	Noninstitutional Population[a]	Total Labor Force[a]	Total Employment[a]
1980	169,349	108,544	100,907
1981	171,775	110,315	102,042
1982	173,939	111,872	101,194
1983	175,891	113,226	102,510
1984	178,080	115,241	106,702
1985	179,912	117,167	108,856
1986	182,293	119,514	111,303
1987	184,490	121,602	114,177
1988	186,322	123,378	116,677
1989	188,081	125,557	119,030
1990	188,990	126,094	119,560

[a]Including resident armed forces.

(continued)

the labor force, and a large number of young people were still in school. Thus, full employment is not a condition in which the entire population is employed. In fact, in the dynamic U.S. economy, with its mobile labor force, it cannot be expected that everyone in the labor force would be working. There will always be some workers quitting, others being discharged, and some moving to other positions. Furthermore, many people, having completed vocational or skilled training, are unable to find a job immediately in their particular field but unwilling to accept a position in another occupation and refrain from entering the labor force until a suitable job becomes available. In addition, a number of persons want to work but have difficulty obtaining or holding a job because of physical or mental incapacities. Consequently, some unemployment is always to be expected.

For nearly three decades reliable authorities, such as the President's Council of Economic Advisers, generally accepted that full employment existed whenever 96 percent of the civilian labor force was employed. This view allowed for 4-percent frictional unemployment, which was held to be consistent with full employment.

By the 1970s there were in the labor force a larger number and percentage of young people, women, and minority workers than existed in the 1950s and 1960s, when the 4-percent unemployment figure came to be accepted as consistent with full employment. These groups historically have had higher unemployment rates than the labor force as a whole. Consequently, when establishing a full-employment unemployment rate for today, the greater

TABLE 1-4 *(continued)*

Status of the Labor Force, 1980–1990
(Thousands of persons 16 years of age and older, except where noted)

Civilian Employment				
Total	Agricultural	Non-agricultural	Total Unemployment	Unemployment Rate
99,303	3,364	95,938	7,637	7.0%
100,397	3,368	97,030	8,273	7.5
99,526	3,401	96,125	10,678	9.5
100,834	3,383	97,450	10,717	9.5
105,005	3,321	101,685	8,539	7.4
107,150	3,179	103,971	8,312	7.1
109,597	3,163	106,434	8,237	6.9
112,440	3,208	109,232	7,425	6.1
114,968	3,169	111,800	6,701	5.4
117,342	3,199	114,142	6,528	5.2
117,863	3,134	114,728	6,535	5.2

SOURCE: *Economic Indicators* (January 1990).

statistical weight assigned to these groups yields a figure in excess of 4 percent—perhaps something in the range of 4.5 to 5.5 percent. For example, the 1990 *Economic Report of the President* projected unemployment to remain between 5.0 percent and 5.4 percent until 1995 in spite of a predicted good economic recovery.

Some observers have suggested that full employment should be near the point where the number of unfilled job vacancies is about the same as the number of unemployed. Unfortunately, up to the present time this is a difficult measurement because the Department of Labor's estimate of unfilled job orders is imprecise.

TABLE 1-5

Total Labor Force by Age and Sex, January 1990 (in millions)

Age	Total	Male	Female
16–19 years	7,063	3,667	3,396
20–24 years	13,551	7,121	6,430
25–54 years	87,413	47,798	39,615
55–64 years	11,832	6,724	5,108
65 and over	3,435	2,012	1,423
Total	123,293	67,322	55,971

SOURCE: *Employment and Earnings* (February 1990).

Although some people think the full-employment rate should be set at a lower or higher number, it is reasonable to define full employment as a condition in which 5.0 percent or less of the U.S. labor force is unemployed.

FULL EMPLOYMENT AND BALANCED GROWTH ACT OF 1978 (HUMPHREY-HAWKINS ACT)

After nearly a year of debate, revision, and compromise, Congress enacted the controversial Humphrey-Hawkins Bill under the official title of "Full Employment and Balanced Growth Act of 1978." The act amended and embellished the Employment Act of 1946, particularly in including specific numerical targets and timetables for full employment and inflation rates. The Humphrey-Hawkins Act also required the President, by January of each year, to spell out in the annual *Economic Report* economic measures designed to accomplish the objectives of the act in the forthcoming year and beyond.

The act set a goal of 3-percent or less unemployment among adult workers 20 years of age or older and 4-percent unemployment for the total labor force by the end of 1983. It required, too, that the rate of inflation be reduced to at least 3 percent by that time. In achieving these goals, the act did give some preference to full employment insofar as it stated that "the policies and programs designed to reduce the rate of inflation shall not impede the achievement of the goals for the reduction of unemployment." The long-term goal for reasonable price stability, however, was to reduce the rate of inflation to zero by 1988. Subsequently, the original target dates for full employment and zero inflation were postponed indefinitely by Congress.

According to the act, a balanced budget and balanced economic growth are to be sought after the nation has reached the unemployment goals. Moreover, the act called for a narrowing of the differences in unemployment rates between various categories of the unemployed. Progress toward this goal, however, has been minimal.

The original draft of the Humphrey-Hawkins Bill included two major items that did not survive its final version, the Full Employment and Balanced Growth Act of 1978. First was the concept of the federal government acting as an "employer of last resort" for the unemployed if unemployment were not reduced to target levels within the specified five-year period. This item would have required the federal government to provide or find jobs for those who could not do so themselves. The second item was the establishment of a broad and specific planning system for the U.S. economy. Such a system would have required an unacceptable amount of government intervention in the economy.

Natural Rate of Unemployment

In recent years some economists have been talking about a so-called *natural rate of unemployment*, meaning the rate at which there is no tendency for

inflation to accelerate or decelerate. Using macroeconomic policies in an attempt to lower unemployment below this rate will cause inflations to accelerate. The natural rate of unemployment is not constant but changes from time to time depending on economic circumstances, such as changes in the structure of the labor force. Currently, most economists place this rate at 5 to 6.5 percent. Back in 1983, the President's Council of Economic Advisers in its annual report used a similar concept called the *inflation threshold* rate of unemployment. At that time, it indicated that the inflation threshold rate was probably between 6 and 7 percent.

Although macroeconomic policies to lower the unemployment rate below the natural rate may cause inflation to rise, microeconomic policies may be used to remove some of the imperfections in the labor market such as worker training, without causing inflation to accelerate.

RECENT PROBLEMS OF UNEMPLOYMENT

In spite of the several measures to reduce unemployment tried by the Nixon Administration in 1971 and 1972, unemployment averaged 5.9 percent for 1971 and was 5.6 percent in 1972. The unemployment rate did drop to 4.9 percent in 1973. As a result of the 1974–1975 recession, it rose again to 5.6 percent in 1974 and, after peaking at 9.2 percent in May 1974, averaged 8.5 percent in 1978 and 5.8 percent in 1979.

When recession occurred again in 1980, unemployment rose to 7.8 percent by July of that year and remained at or near 8 percent until late 1981, when it rose above 9 percent. The rate continued to rise in the recession of 1982, finally peaking at 10.7 in December of that year. By the end of 1983, a year of economic recovery, unemployment had fallen to 8.2 percent and continued to fall to 6.9 percent by December 1985. But by mid-1986 it was back up to 7.3 percent, before falling again to 5.2 percent in 1989. It was still 5.2 percent in February 1990.

In considering current problems of unemployment, several questions leap to mind: Why has unemployment stayed high among certain groups, such as teenagers and nonwhites, even in a full employment period? How can hard-core unemployment be eliminated or alleviated? What is causing the present state of unemployment? How is it possible to have unemployment and inflation simultaneously? On the other hand, just how serious is unemployment?

WHO ARE THE UNEMPLOYED

A common question in recent years has been: Who are the unemployed? Are they members of a particular group? Are they older or younger people? Are they skilled or unskilled? Are the same people continually unemployed, or is there a turnover in the ranks of the unemployed?

Types of Unemployment

Frictional unemployment arises from the normal operation of the labor market and occurs even in periods of full employment. Workers are constantly being hired or fired, quitting, withdrawing from the labor force for special training, taking their time on entering or reentering the labor force to search for the right job, and relocating, often interstate, from one job to another. Frictional unemployment is usually short term and accounts for much of the full-employment unemployment.

Structural unemployment results from an imbalance between the skills possessed by workers and those demanded by the labor markets. Structural unemployment tends to be long term. Some economists argue that a substantial portion of our present unemployment is structural in that unemployed workers are often not qualified to fill available job openings. In some instances, for example, they are rapidly displaced because of technological development and automation. New skills arise and old skills are no longer as important as they once were, or the demand for them no longer as great. Consequently, displaced workers, usually two million or more annually, have difficulty finding new jobs. Some are unemployed because they lack proper training, others because they lack the geographic mobility to take advantage of distant job opportunities. As a result, there are always unfilled jobs on the one hand and jobless workers on the other.

Current data from the Department of Labor indicate that the number of vacancies is substantial. Moreover, some groups have suggested that in our growing, dynamic economy perhaps we ought to expect a higher rate of structural unemployment than we have been accustomed to in the recent past.

Technological unemployment refers to a particular form of structural unemployment. It occurs when workers lose their jobs because of the introduction of modern labor-saving machinery and equipment.

Cyclical unemployment results from less than full use of productive capacity due to a recession or depression and may be short term or long term, depending on the length of the recession. It is due to insufficient aggregate demand in the economy. If the aggregate demand can be strengthened by an increase in consumption, investment, or government spending, it is argued then, that the level of business activity will increase and cyclical unemployment will drop. Much of the high rate of unemployment associated with the recessions of 1974–1975, 1980, and 1982 was cyclical.

Induced unemployment is a consequence of subsidies provided by public socioeconomic programs. One source of induced unemployment in the United States is the unemployment compensation system. Although the system serves as an automatic stabilizer and has many other benefits, it does tend to increase or lengthen unemployment. The tax levied on an employer, for example, is not in direct proportion to the employer's layoffs. Therefore, it may be easier for a firm to lay off workers than it would be if it had to pay the full cost of the

unemployment benefits that result. Moreover, in many cases the minimal difference between some people's unemployment benefits and what they may be able to earn on another job may deter their search for a new job. This is especially true where laid-off workers, such as those in the auto industry, receive supplementary unemployment benefits (SUB) from their employers. Unemployment benefits, plus SUB, provide the workers with an income equal to 90–95 percent of their regular take-home pay. Other programs such as welfare payments, food stamps, and rent subsidies can cause a similar upward bias in the rate or duration of unemployment.

Duration of Unemployment

The average length of unemployment for an idled worker generally varies with economic conditions, tending to be longer in a time of economic sluggishness or recession than in a period of prosperity. In the recession of 1982, it reached 20.0 weeks; in 1988, it averaged less than 13.0 weeks. Long-term unemployment, where people are out of work for 15 weeks or more, generally tends to change accordingly.

Long-term unemployment is usually more prevalent among certain groups in the labor force, such as older workers, nonwhites, and workers laid off in industries manufacturing durable goods. Although stable employment seems to be more characteristic of white-collar workers, unemployment is found among professional and technical workers, craftsmen, clerks, and salesworkers, as well as skilled and unskilled workers. This was especially true in the recession of 1982–1983.

Characteristics of the Unemployed

An analysis of unemployment data reveals certain characteristics of the unemployed, which will add to our understanding of the problem.

Age and Race. The incidence of unemployment is usually high among teenage workers, who are likely to change jobs frequently. The rate of unemployment among nonwhite male workers has been twice the rate of white male workers, largely because nonwhite workers are concentrated rather heavily in the unskilled and semiskilled occupations where unemployment rates are generally high.

Table 1-6 shows the unemployment rate for various categories of people in the civilian labor force. The lowest unemployment rate, 3.4 percent, is among married men. The highest, teenage unemployment, is 12.7 percent. The unemployment rate for black teenagers is over 26 percent.

Sex. Of those unemployed, 2.9 million are female. Because there are 56,555 million females in the civilian labor force, the unemployment rate among women in January 1990, is 5.2 percent, the same as the national average. (Table 1-6 shows the unemployment rates for other categories of people.)

TABLE 1-6

Unemployment Rates within Various Categories in the Civilian Labor Force, January 1990

All workers			5.3
White		4.5	
Male[a]	4.0		
Female[a]	4.0		
Black		11.2	
Male[a]	11.2		
Female[a]	9.2		
Hispanic origin			7.1
Married men			3.4
Experienced workers			5.1
Teenagers (16–19 years)			12.7
White		12.9	
Black		26.7	
Labor force time lost[b]			6.0

NOTE: Not seasonally adjusted.
[a]20 years and over.
[b]Total hours lost by the unemployed and persons on part-time employment for economic reasons as a percent of potentially available labor force hours.

SOURCE: *Employment and Earnings* (February 1990).

Inasmuch as over 60 percent of the women in the labor force are married, it is reasonable to assume that married women comprise a substantial percentage of the unemployed. Data for January 1990 show that in only a small number of the households (124,000) were both husband and wife unemployed.

The Hard-Core Unemployed. Within the hard core are illiterates, the chronically ill, those physically and mentally incapacitated, and the like. The hard core unemployed are generally so demoralized that individual attention, rather than mass treatment by job-placement services, is needed if they are to enter the labor force. Many existing government and other retraining programs are far beyond the capabilities of the hard core, who form a highly singular class of unemployed and unemployables, socially and economically isolated.

Even if the full-employment goal of 4-percent unemployment were to be realized, there would still be, at the bottom, 1 percent of the population that is unemployable. Studies indicate that the hard core unemployed have developed into a class of social outcasts characterized by very low incomes, residence in blighted areas, isolation from the mainstream of life, and an attitude that includes (1) no feeling of obligation to the family, (2) deep dejection at inability to find work, (3) general loss of self-respect, and (4) mental imbalance. Many

of these people do not know how to look for a job, fill out an application form, or market any skills and experience they may have.

MEASUREMENT OF UNEMPLOYMENT

There are many ways in which to measure the employed and the unemployed. Usually, figures for employment are more reliable than those for unemployment, and at times much controversy can arise regarding the method used to count the unemployed.

The Survey Method

Information on the labor force is available from the Bureau of Labor Statistics (BLS) Current Population Survey and appears in Department of Labor publications such as the *Monthly Labor Review* and *Employment and Earnings*. Well-trained interviewers gather figures by conducting a survey of households during the week ending nearest the twelfth of each month. The survey sample consists of about 60,000 households in 729 areas throughout the U.S., a sampling ratio of one in 1,200 households. The interviewers ask questions carefully and skillfully in order not to influence the response of the persons being interviewed. Any responsible person, usually the homemaker, may answer the questions concerning the working status of other members of the household who are not at home during the time of the interview. The survey classifies persons into three basic groups: employed, unemployed, and not in the labor force. The BLS also conducts a monthly survey of 200,000 businesses that employ about 35 million people.

Employed persons include the following: (1) those who during the survey week did any work at all as paid employees or who worked in their own businesses, professions, or farms, or who worked 15 hours or more as unpaid workers in family businesses; (2) those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor disputes, or personal reasons; and (3) members of the armed forces stationed in the United States.

Unemployed persons include everyone who did not work during the survey week, but who made specific efforts to find a job within the prior four weeks and were available for work during the survey week (except for temporary illness). Also included as unemployed are those not looking for work, but (1) waiting to be called back to a job from which they had been laid off or (2) waiting to report to a new job within 30 days.

Not in labor force includes all civilians 16 years and over who are not classified as employed or unemployed.

One group classified as not in the labor force under present definitions consists of *discouraged workers*, who believe they cannot get a job because

none are available or because some personal factor such as age, lack of skill or training, or some sort of discrimination would prevent them from finding work. A special survey in 1981 indicated that two-thirds of the 1.1 million discouraged workers that year cited job-market factors as the reason they could not find work. A substantial controversy exists among labor leaders, business leaders, and government officials as to whether discouraged workers ought to be counted as unemployed rather than as not in the labor force. The number of discouraged workers reached 1.2 million during the 1982 recession.

The household survey is the major source of information about the total labor force as well as about the employed and unemployed. Although the survey method has some weaknesses, the Department of Labor prefers it to the count of state unemployment claimants because a large number of persons in the labor force are not eligible for unemployment benefits. In addition, claimants may exhaust their benefits or cease to be claimants, and therefore may no longer be listed as unemployed in the state employment office count. According to the Department of Labor, the survey method is 95-percent certain of being correct. Nevertheless, the state BES (Bureaus of Employment Services) data have certain advantages because the states gather data every week rather than monthly. Furthermore, the data yield specific information about local labor market areas.

Recent experiences indicate that total unemployment can be estimated by dividing the number of unemployment claimants by a corrective factor of 0.42. Thus, average weekly unemployed claimants of 2.6 million in January 1989, would be adjusted to 6.2 million unemployed in the total civilian labor force. This is close to the actual BLS survey count of about 6.5 million. But such a method of projecting total unemployment is not as accurate as the survey method. This is especially so because the corrective factor used varies from state to state and changes over time.

Underemployment

For decades the BLS survey measured the employed and unemployed, but made no attempts to measure the *underemployed.* For this reason, some critics maintain that by neglecting unemployment due to the short work week, the survey did not measure the true level of unemployment. So great was this concern that the BLS began to record underemployment in the mid-1960s.

Labor force time lost is a measure of worker-hours lost to the economy through unemployment and involuntary part-time employment and is expressed as a percentage of potentially available worker-hours. It assumes that: (1) unemployed persons looking for full-time work lose an average of 37.5 hours per week, (2) people looking for part-time work lose the average number of hours actually worked by voluntary part-time workers during the survey week, and (3) part-time workers for economic reasons lose the difference between 37.5 hours and the actual number of hours they work. In January 1990,

labor force time lost was 6.0 percent compared to the actual measure of 5.2-percent unemployment. The difference between these two figures is a measure of underemployment.

The procedure used to calculate labor force time lost has some weaknesses, however. First, it is questionable whether 37.5 hours or 40 hours per week should be used as the norm. Second, if underemployment is incorporated in the rate of unemployment, should the latter be adjusted downward in instances of overtime employment, such as 40.5 average hours of work? Even using a 37.5-hour norm, that would mean hyperemployment of 8.0 percent (3.0 ÷ 37.5 = 8.0 percent) from overtime. Overtime then more than offsets the labor force time lost.

Multiple Job Holders

Some critics feel that the practice of *moonlighting*—holding of two or more jobs—should be curtailed in the interest of reducing unemployment. Statistics indicate that in 1989, for example, 7.3 million persons, or 6.2 percent of the employed labor force held two or more jobs. Most of these multiple job holders were in nonagricultural industries. Eliminating moonlighting would not increase employment proportional to the decrease in multiple job holders, of course, because most of the secondary jobs are part-time. Some of them amount to only a few hours a week, and frequently the rate of pay is less than that for the worker's primary job. In some cases the secondary job is that of an unpaid family worker. In the case of two-thirds of a million persons whose primary jobs were in nonagricultural industries, the secondary jobs were in agriculture. Many of these represented farmers working at city jobs.

Job Vacancies

Some people suggest that jobs are available if the unemployed would just get out and look for them. In many cases, however, the unemployed may not have the skill, aptitude, or mobility to take advantage of existing job vacancies. In other cases the job may be insignificant, vocationally and economically, compared to the unemployed person's usual line of work.

Job vacancies, as measured by the BLS, are the stock of unfilled job openings for all kinds of positions, both full-time and part-time, permanent and temporary, for which employers are actively seeking workers. The job vacancy rate is computed by dividing the number of current job vacancies by the sum of employment plus vacancies and multiplying the result by 100.

In 1988 state employment services reported an average of 600,000 job vacancies per month. About half were long-term vacancies, jobs that remained unfilled for 30 days or more. At that time 6.7 million people were jobless, and the unemployment rate was 3.4 percent. If the unemployed had filled the job vacancies at that time, the rate of unemployment would have dropped less than one percentage point.

Criticism of the Survey Method

Although there is general agreement that the BLS survey count of employment is very good, numerous criticisms have been leveled at its method of counting unemployment. Various critics feel that the BLS should not count secondary wage earners, students, or retirees among the unemployed. Some even argue that the survey should not count anyone as unemployed who does not need a job. This view, however, sets up a normative qualification that could be very difficult to measure. Furthermore, if the survey does not count people who neither work nor need a job as unemployed, should it also include people who are working but do not need a job from the count of the employed and perhaps of the labor force?

Critics have also suggested that the degree of unemployment may be influenced by the enthusiasm of the census takers, arguing that the harder they look to find unemployment, the more they will find. In contrast, other critics have suggested that the unemployment figure is too low, arguing that many job seekers may become discouraged and withdraw from the labor market. Yet another group of critics believes that society puts too much economic, social, and political emphasis on the measure of unemployment. They contend that the important measure is that of total employment rather than that of unemployment.

Over the years, the Department of Labor has admitted that many complexities exist in the measurement of the unemployed. It has staunchly defended the BLS survey method, however, explaining the purpose and reasoning behind many of the statistical calculations. The department has stated many times that what is needed is not a rejection of the statistics, but provision for more detail and more meaningful breakdowns so that the data would be more useful to public policy makers.

Evaluation of Data

The United States generally receives high praise from statisticians throughout the world for the methods, techniques, frequency, thoroughness, and integrity of its statistical data on such matters as unemployment, production, and prices. Nevertheless, in recognition of the numerous questions about the collection and measurement of employment/unemployment data, the President and Congress in 1976 established a National Commission on Employment and Unemployment Statistics to evaluate our system of collecting, calculating, and disseminating employment and unemployment statistics and to make recommendations on methods of improvement.

After months of hearings, study, and deliberation, the commission issued its final report, *Counting the Labor Force*, on Labor day, 1979. The commission stated that it was "reasonably satisfied that available data is used in

appraising current labor market trends." But the commission found that the "richness" of the data that describe an individual's current labor force status is not matched by information on how that status came about or under what conditions it would change.

The commission proposed no major changes, but offered 88 recommendations to help the statistical system reflect changing economic conditions and policy needs, including a plan for expanding the size of the statistical sample, and several minor changes in labor force definitions. It made no recommendation, however, for changing the definition of unemployment by including "discouraged workers" or for changing to 18 the age for inclusion in the labor force. Nor did the commission recommend a much discussed "hardship" index linking income to unemployment data. It did, nevertheless, recommend preparation of an annual report on economic hardship.

U.S. UNEMPLOYMENT COMPARED TO THAT OF OTHER NATIONS

Critics of the U.S. economy have at times pointed out that unemployment in some countries, such as Japan and West Germany, is lower than it is in the United States. Table 1-7 shows unemployment rates for the United States and other major nations adjusted for purposes of comparison. The U.S. ranking improved after the recession of 1982. Moreover, the U.S. economy created new jobs faster than did most other nations during the 1983–1989 recovery period.

TABLE 1-7

National Civilian Unemployment Rates
(adjusted to the United States definition)

	1980	1982	1984	1988	1989
United States	7.1	9.7	7.5	5.5	5.3
Australia	6.1	7.1	9.0	7.2	7.3
Canada	7.5	11.0	11.3	7.8	7.5
France	6.4	8.5	10.0	10.5	10.1
West Germany	2.9	5.9	7.8	7.1	5.7
Great Britain	6.8	12.3	13.0	8.3	6.4
Italy	3.9	4.8	5.6	7.9	7.8
Japan	2.0	2.4	2.8	2.5	2.6
Sweden	2.0	3.1	3.1	1.6	1.8

SOURCE: *Statistical Abstract of the United States* (1989).

WHAT IS BEING DONE ABOUT UNEMPLOYMENT?

Under the Employment Act of 1946, the Administration in office has an obligation to prevent, reduce, or eliminate unemployment. Section Two of the Act declares:

> The Congress hereby declares that it is the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy with the assistance and cooperation of industry, agriculture, labor, and state and local governments, to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking work, and to promote maximum employment, production and purchasing power.

This act, furthermore, requires the President to make an *Economic Report* in January of each year. The report, delivered to a joint Congressional committee, reviews economic conditions of the previous year, gives a preview of the current year, and makes recommendations for bringing about maximum or full employment. The act likewise provides for a President's Council of Economic Advisers to aid and assist him in making the report and making recommendations for implementing the act.

The Humphrey-Hawkins Act of 1978, as mentioned earlier, expanded and strengthened the mandate of the Employment Act of 1946. It specified a procedure for the setting of numerical goals to be reached by 1983. The goals specified in the law are an adult unemployment rate of 3 percent, an overall unemployment rate of 4 percent, and a rate of inflation of 3 percent. President Reagan, however, recommended modification of the timetable for achieving these goals.

In addition to continuation of the annual Presidential *Economic Report*, the Humphrey-Hawkins Act requires the Federal Reserve Board (the "Fed") to submit to Congress twice annually its objectives and plans for monetary policy and to discuss the relationship between those plans and objectives and the President's short-term goals contained in the *Economic Report.*

The act also emphasizes the importance of reducing the differences in unemployment rates of specific groups within the labor force, such as black and Hispanic Americans, in the attempt to achieve full employment.

Measures to Alleviate Cyclical Unemployment

Many attempts have been made to lessen unemployment. The various measures attempted or suggested fit in two broad categories: those that try to reduce cyclical unemployment, and those that seek to correct structural unemployment. In the first category are the several Congressional acts and executive

actions that aim at raising the total demand in the economy by encouraging higher consumption, greater business investment or higher government spending. Easier monetary policies by the Treasury Department and the Federal Reserve have worked in this direction. Government deficits in excess of $100 billion in the past several years have been used with the notion that they might help increase employment or prevent unemployment.

During the period 1960 through 1989, the federal government implemented many measures and programs to alleviate cyclical unemployment. In the period of nagging unemployment of the early 1960s, for example, the government reduced personal and corporate taxes, implemented an emergency public works program, started a program to reduce poverty, used tax credits to stimulate investment, extended unemployment compensation for an additional 13 weeks, and reduced excise taxes.

During and following the recession of 1974–1975 the government again reduced taxes, extended unemployment compensation, tolerated large federal deficits, increased the money supply, lowered interest rates, increased tax credits, expanded public employment programs, and took other measures to bolster economic activity and reduce unemployment.

In the early 1980s the federal government implemented various supply-side measures to encourage savings, stimulate investment, motivate worker effort, and deregulate the economy with the hope of expanding economic activity and reducing unemployment. Many of these measures were contained in the Economic Recovery Tax Act of 1981 which was designed to stimulate the economy. In response to the severity of the recession of 1982, Congress extended unemployment benefits from their normal 26 weeks to 52 weeks. Moreover, many workers who were laid-off or who lost jobs as a result of increased imports became eligible for additional unemployment programs under the Trade Adjustment Assistance Program, which had been established in 1974.

Measures to Alleviate Structural and Technological Unemployment

Measures mentioned in the previous section were attempts to increase overall effective demand through increases in investment, consumption, and government spending. In contrast, the following measures represent attempts to eliminate or alleviate structural and technological unemployment, in which unemployed workers' skills do not fit available job opportunities.

Area Redevelopment Act (1961). This act tried to bring industry to depressed areas and jobs to displaced workers. Its main features were financial aids provided for distressed areas or areas with labor surpluses. These aids took the form of loans and grants for the construction of community projects, and loans for private industrial undertakings of various types that would help to lessen unemployment. Included in the program was training to prepare workers

for jobs in new and expanded local industries. During the life of the act, the government approved 1,000 projects involving 65,000 trainees in 250 development areas.

Manpower Development and Training Act (1962). The primary purpose of the Manpower Development and Training Act (MDTA) was to provide training for the unemployed and underemployed to qualify them for re-employment or full employment. The MDTA allocated funds among states on the basis of each state's proportion of the total labor force, its total unemployment, and its average weekly unemployment payment.

The act established training courses in those skills or occupations where there was a demand for workers, and the trainees had a reasonable chance of securing employment upon completion of the training program. Such programs were set up through the local offices of state employment services primarily utilizing state and local vocational-education institutions, but also private schools and other training institutions. During the lifetime of the act, over two million enrollees received training in its programs.

Economic Opportunity Act (1964). This act, also known as the Anti-Poverty Act, established several programs in an effort to eliminate poverty. Included in the war on poverty were numerous programs sponsored under the cooperation of several federal, state, and local agencies. Among other things, the act provided for the establishment of youth conservation camps, work-training programs for unemployed youths, and work-study programs for high school and college students of low-income families. It also included special programs to combat poverty in rural areas, loans to business to increase investment and raise employment, urban job centers for youth, literacy programs for adults, and a VISTA Corps (Volunteers in Service to America) for the purpose of providing special services within the U.S. similar to the Peace Corps work abroad.

The act established an Office of Economic Opportunity (OEO) to implement its provisions. Community Action Commissions set up in metropolitan centers coordinated most programs at the local level.

The act defined poverty as an income of $3,000 or less for a family of four. Based on that figure the number of families declined from nearly 20 percent in 1964 to 9.3 percent in 1972, when the OEO was dismantled and most of the programs eliminated or transferred to other federal agencies. Since then, the incidence of poverty has fluctuated. The low point occurred in 1974, when it was down to 8.8 percent. The high point was the recession of 1982 when it reached 12.4 percent. As shown in Table 1-8, the incidence of poverty is much higher among black and Hispanic families than among whites.

The official poverty-level income has climbed continuously with the increase in the CPI and now stands at $12,000 per year. If noncash income such as rent subsidies, food stamps, and medical benefits are included as

TABLE 1-8

Percentage of Families in Poverty in the U.S., 1960–1988

Year	All Races	White	Black	Hispanic
1960	18.1	14.9	NA	NA
1970	10.1	8.0	29.5	NA
1974	8.8	6.8	24.9	21.2
1980	10.3	8.0	28.9	23.2
1982	12.4	9.7	32.3	27.2
1988	10.4	7.9	28.2	24.8

income, the incidence of poverty drops about 1.5 percentage points to less than 9 percent.

Appalachian Regional Development Act (1965). As a result of the findings of President Kennedy's Appalachian Commission, Congress voted to enact the Appalachia Bill, which provided for various types of aid for a 13-state area extending along the Appalachian Mountains from New York State to eastern Mississippi. The program for this depressed area was to develop an economic base that would encourage subsequent private investment as a means of improving the area's economic level.

The act provided nearly $1 billion to improve the economic condition of the area in the hope of raising production, employment, and income of its inhabitants. At first, it particularly emphasized road construction, modernizing health facilities, land improvement and erosion control, timber development, mining restoration, and water resource surveys.

The JOBS Program (1968). The Johnson Administration continued to emphasize worker development and training, advocating programs involving more creative collaboration between private industry and the federal government to attack the problem of hard-core unemployment and poverty. President Johnson's Manpower message in 1968, for example, called for the establishment of Job Opportunities in the Business Sector (JOBS).

The program depended on a commitment by businesses in metropolitan areas to hire thousands of disadvantaged people and give them on-the-job training, counseling, health care, and other supportive services needed to make these individuals productive workers. The program assumed that immediate placement on a job at regular wages, followed by training and supportive services, would provide superior motivation for disadvantaged workers than training them first in an effort to qualify for jobs later. By 1978, several hundred thousand disadvantaged workers had received jobs from individual companies and through Department of Labor contracts. Six of every eight workers hired

on federally financed programs were blacks and one in eight was Spanish American. About half of those hired were under 22 years old.

Public Service Employment. The Emergency Employment Act of 1971 authorized the establishment of a Public Employment Program (PEP). For this purpose Congress appropriated $2.25 billion for a two-year period to finance transitional public service jobs in state and local governments. Funds were to be allocated when national unemployment equaled or exceeded 4.5 percent for three consecutive months.

Although the Emergency Employment Act expired, the concept of public-service employment survived to be incorporated into the Comprehensive Employment and Training Program. In 1980, over one million workers were engaged in public-service employment.

Comprehensive Employment and Training Act (1973). A major step toward the decentralization and decategorization of employment programs occurred when President Nixon signed into law, on December 28, 1973, the Comprehensive Employment and Training Act (CETA). The goal of the act was to transfer the responsibility and resources for many manpower programs from the federal government to states and localities and, by doing so, to reduce the fragmented efforts of nearly 10,000 programs throughout the nation. The act made governors and elected officials of major cities and counties responsible for the planning and operation of comprehensive employment programs. In addition to regular funds for such things as public-service employment programs, the act provided special funds for areas where unemployment was 6.5 percent or higher for three consecutive months. State and local governments received 80 percent of the available funds. The Secretary of Labor used the other 20 percent to administer certain national programs such as the Job Corps. Many existing programs, such as JOBS and MDTA, were placed under the jurisdiction of CETA. After passage of the act, several states implemented comprehensive manpower programs.

The Emergency Jobs and Unemployment Assistance Act of 1974 and the Emergency Jobs Program Extension Act of 1976 amended CETA, and Congress reauthorized it in 1978. The purpose of CETA was to provide training, employment and other services leading to unsubsidized employment for economically disadvantaged, unemployed, and underemployed persons. The several titles of CETA authorized a variety of activities.

Title I, for example, established a nationwide program of comprehensive employment and training services administered by prime sponsors which, for the most part, were states and local government units. Titles II and VI provided programs of temporary public-service employment during periods of high unemployment. Title II provided funds for supervised training and job placement programs for special groups such as young workers, ex-offenders, older workers, persons of limited English-speaking ability, Indians, and migrant and

seasonal workers. Title IV authorized a program of intensive education and training, known as the Job Corps, for disadvantaged youths. Title VII established a young adult conservation corps. In 1981 Congress appropriated $7.7 billion for various CETA programs, and 2.9 million persons participated in CETA programs.

CETA had approximately 60–70 percent "positive terminations" of participants in its programs. Positive terminations are defined as individuals who are placed either directly or indirectly in unsubsidized employment, find jobs through their own efforts, enlist in the armed forces, or engage in other activities that increased their employability.

In fiscal 1981, for example, 68 percent of the CETA participants received positive terminations. Thirty-seven percent were placed on jobs either directly or indirectly or through self-effort. Sixteen percent left CETA programs to enroll full time in school or in a program not funded by CETA, to enter the armed forces, or to engage in any other activity that increased their employability. Thirty-two percent of the participants were nonpositive terminations who refused to continue their participation in CETA programs or left for reasons unrelated to jobs or activities that increased their employability.

In addition to several special programs for American Indians, migrant workers, ex-offenders, and older workers, CETA provided funds for a summer employment program for economically disadvantaged youth. In 1981, $769 million helped to fund short-term jobs for 774,000 youths aged 16–21. Participants worked in such places as schools, libraries, community service organizations, hospitals, and private nonprofit agencies. Typical positions included nurse's aide, typist, school maintenance aide, cashier, library aide, clerk, and nutrition and day-care aide.

The Jobs Corps, established by the Economic Opportunity Act of 1964, continued under Title IV of CETA. Its purpose was to assist disadvantaged youths aged 16–21 to become more responsible, employable, and productive. All participants have to be out of work, out of school, and in need of additional education, vocational training, and counseling. A total of 41,000 enrollees were in the Job Corps as recently as 1987. Most participants were from low-income families. Fifty-five percent were black youths, and eleven percent were of Hispanic origin. Eighty-seven percent had less than a high school education. In fiscal 1987 the Job Corps had an overall placement rate of 86 percent. Of the participants available for placement, 68 percent were placed in jobs, 28 percent entered or returned to school, and 4 percent entered the armed forces. Since its inception in 1964, nearly a million young people have enrolled in the Jobs Corps. In 1981 the unit cost for Job Corps operations was approximately $16,000. In constant dollars, however, the per-unit cost was less than it was in 1968.

The Work Incentive Program (WIN) was another major program established in the 1960s and subsequently placed under the auspices of CETA. All applicants for and recipients of Aid to Families with Dependent Children who

were 16 years of age or older were required to register for WIN unless legally exempt. In the early years of WIN, the program emphasized increasing job readiness through counseling, training, and supportive measures. Later, emphasis shifted to immediate job placement, with training and other assistance provided only when placement is not feasible.

In fiscal 1987 there were 914,000 current WIN registrants, three-fourths of whom were women and more than one-half of whom were white. Sixty percent of the WIN registrants had not completed high school. In 1987, many WIN participants, upon completion of their program, entered subsidized employment. Most of them were employed in entry-level jobs at the minimum-wage level.

Fiscal 1981 was the first full year of operation of the Private Sector Initiative Program, also funded by CETA, which brought together the public and private sectors of the economy in an effort to improve delivery of employment and training programs. During 1981, the program served 117,000 participants, twice as many as the previous year. Of the 86,900 leaving the program 53 percent were placed in unsubsidized employment, 89 percent in the private sector. An additional 10 percent left the program to return to school or enter other employment and training programs. Forty-nine percent of the participants were minorities.

Job Training Partnership Act (1982). The Job Training Partnership Act (JTPA) established a more formal partnership between private industry, the public sector, and vocational training schools to plan, design, and provide federally financed training. Under the act, federal resources go to those identified as most in need: economically disadvantaged youth, low-skilled and chronically unemployed adults, and skilled workers who have lost their jobs in declining industries and regions.

JTPA training and employment programs are designed both to improve individuals' abilities to get and keep jobs by developing skills and to support services that match individuals with jobs. The major federal activity under the act consists of grants to States. These include block grants, which allow states to design training programs to meet the need of their disadvantaged population, and categorical grants for employment services, public service employment for older workers, summer youth employment and training, and job placement and training for workers displaced by changing economic conditions.

When Congress terminated CETA in September 1983, it transferred many of the act's programs to the new JTPA. Since then, however, a number of the older programs have been phased out. JTPA was still in force as late as mid-1989 and had 337,000 enrollees. At that time, however, President Bush was working on new legislation to aid the unemployed.

Targeted Jobs Tax Credit Program. The federal Tax Equity and Fiscal Responsibility Act of 1982 provides tax credits or wage subsidies to employers who hire youths, welfare recipients, Vietnam veterans, and handicapped

persons. Tax credits are available for up to two full years. In the first year the tax credit is equal to 50 percent of the hired person's earnings, up to a maximum of $3,000. In the second year the tax credit equivalent is 25 percent, up to a maximum of $1,500. This program was also in force in 1989. In addition, there were 743,000 youngsters working in the Federal Summer Youth Employment Program.

CONCLUSION

The labor force will continue to grow in the future, and with this growth will come new problems, especially in the absorption of young workers into the employed sector, and the reabsorption of workers displaced by rapid technological development. In addition, the recurrence of cyclical unemployment, such as that which accompanied the 1980 and 1982 recessions, will continue to aggravate the problem of unemployment.

It is expected that the labor force will grow to 139 million by the year 2000, an increase of 13 million over the 126 million labor force of January 1990. This means we will add about 1.3 million workers to the labor force annually. The labor force grew at an annual rate of 2.2 percent during the 1970s, slowed to 1.7 percent in the 1980s and will fall below 1.0 percent annually in the 1990s.

There will also be a drop in the percentage of workers in the 16–24 age group. This trend should help reduce the unemployment rate among the youth of the nation, which is much higher than that for adults.

On the other hand, the percentage of Black, Hispanic, and Asian workers will rise substantially, increasing by nearly 20 million by the year 2000.

The proportion of women entering and reentering the labor force will continue to rise. Especially noticeable will be the reentry of many homemakers into the labor force once their family responsibilities have been reduced with the maturing of their children. By the year 2000, women will constitute 47 percent of the labor force, compared to 45 percent today.

The challenge to maintain full employment is great because nearly one-third of the new entrants to the labor force are high school dropouts without training or skills. Unfortunately, the demand for unskilled industrial workers will not increase in proportion to the number of youths coming into the labor force. The largest increase in demand will be for professional, clerical, and skilled workers, and those occupations which generally require either some degree of training and skill or a higher level of education.

Another area of concern is arising as a consequence of increasing life expectancy. In the decade ahead, there will be a growing number of older

persons in the labor force. Many of these persons want to continue in active employment rather than retire completely from the labor force. Probably the greatest difficulty will occur in occupations that will not show substantial growth. Farm workers likewise present a problem because the actual number required by 1995 will be less than the number required today.

Rapid technological development and automation will aggravate the unemployment problem as old skills and occupations disappear and new ones arise in their places. The changing structure of industry from mass production to high tech will also eliminate many jobs, adding to the unemployment problem. At present there are more than two million workers displaced each year because of various economic and technological changes taking place. Occupations and geographic mobility will become more essential in maintaining a high level of employment. This is especially so in smokestack industries where current and pending retrenchment and imports have caused widespread job losses. Training and retraining will become more important as part of the solution to the problem of persistent unemployment.

QUESTIONS FOR DISCUSSION

1. Is 4-percent unemployment a reasonable goal for a full-employment economy?
2. Should formal retraining programs, such as those offered through JTPA, be continued as a solution to the problem of unemployment?
3. Should the federal government make payments to private industry or give them income tax credits for training disadvantaged workers?
4. Should a short work week be promoted as a means of lessening unemployment?
5. Should "discouraged workers" be counted as unemployed?
6. What effect do you think the minimum wage has on teenage employment?
7. Would it be beneficial to promote more vocational education in our high schools?
8. Do you agree with the objective of the Job Training and Partnership Act?
9. Should moonlighting be eliminated or regulated as means of spreading employment?
10. Should the federal government serve as an "employer of last resort" for the unemployed?

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Whether it starts with increased wages, higher material costs, or increased prices of consumer goods is difficult to say. If wages or material costs do increase for some reason, however, producers are likely to increase the prices of their finished goods and services to protect their profit margins. Rising prices in effect will decrease the purchasing power of wages. As a result, wage earners, especially through their unions, may apply pressure for further wage increases. These increases in turn may lead to further increases in the price of both materials and finished products, which then lead to additional wage increases, thus developing into what has become known generally as the *wage-price spiral.*

Cost-push inflation became more pronounced in the 1960s and 1970s with the growth and increased strength of labor unions. Aggravating the trend was the use by large and powerful producers of *administered pricing*, in which a seller can exert an undue influence on the price charged for a product because of the absence of competition.

Structural Inflation

Structural inflation may also occur in either a fully employed or less than fully employed economy. This type of inflation arises when there is a substantial shift in demand to the products of one industry away from those of other industries. Past experience indicates that there is a certain amount of both flexibility and immobility among the factors of production. More specifically wages and prices tend to have downward rigidity and upward flexibility due to administered pricing and labor union pressures.

If there is a heavy shift in demand to the products of Industry X and away from the products of Industry Y, for example, it could push production in Industry X to, or near, full capacity. Because of the immobility and scarcity of labor and resources, Industry X may have to pay more for wages and materials as it tries to increase production. Under such circumstances, increased demand could cause prices to rise in Industry X as a result of demand-pull inflation. This increase would in turn cause the general price level to rise because even though demand for goods in Industry Y is less, prices for those goods, because of inflexibility, would not decline. In other words, general inflation occurs because the rise in prices in Industry X is not offset by a corresponding drop in prices in Industry Y.

The situation is aggravated when the inflationary effects spill over into other industries. The general increase in the price level could instigate wage increases and subsequently price increases in Industry Y. Although production and employment might have been reduced in Industry Y as a result of reduced demand for its products, employers may be forced to pay higher wages to offset the higher living costs in order to hold on to experienced and skilled workers. In effect, structural inflation contains elements of both demand-pull and cost-push inflation.

One answer to each of these three types of inflation is increased productivity. In demand-pull inflation, if productivity can be increased to provide the additional goods and services demanded, the inflationary pressure will be removed. On the other side of the equation, reducing either the money supply or spendable income can lower the demand for goods and services. Cost-push and structural inflation can be ameliorated if wage increases are kept in line with increases in productivity. Because wage raises would increase in proportion to the increase in productivity, incomes would stay in balance with the amount of goods produced. Goods and services would be available when wage earners spent their higher incomes.

Social Inflation

In recent years the United States has experienced a fourth type of inflation resulting from the increasing demand for more government services in the form of higher Social Security payments, improved unemployment benefits, the distribution of more welfare, wider health care coverage, better rent subsidies, and a host of other social services. This *social inflation* is further encouraged by the rising costs to private enterprise resulting from greater fringe benefits, such as longer vacations, more holidays, shorter hours, better pensions, and broader hospital and insurance coverage for employees. Moreover, the cost of helping to preserve the natural environment through the use of expensive antipollution equipment, either by the government or by private enterprise, tends to increase prices; as do the financial requirements of the Occupational Safety and Health Act (OSHA) and the Equal Employment Opportunity Act (EEOC). Social inflation may occur at full employment, adding to demand-pull inflationary pressures, or at other times it may augment cost-push inflationary pressures. Moderation in such measures, especially wage demands, was partially responsible for the disinflation that occurred in the economy in the mid-1980s.

DEFLATION, DISINFLATION, AND STAGFLATION

Other terms often used when studying inflation are deflation, disinflation, and stagflation. *Deflation* refers to an actual decline in the price level, which has occurred in relatively few months during the past few decades. Even when the overall price level may be increasing, however, the price of some items in the price index may be deflating. *Disinflation* is a term used to refer to a slowdown in the rate of inflation. Disinflation was prevalent in the mid-1980s. *Stagflation*, a combination of sluggishness in economic activity and inflation, occurred in the 1970s and 1980s, particularly during recession periods.

Demand and Supply

Changes in demand and supply can be aggravated by any type of inflation. With an increase in demand and/or a shortage of supply, whether actual or anticipated, prices will rise. This tendency has been evident in regard to food, materials, fuel, and energy in the past decade. Such shortages are sometimes referred to as "supply shocks." Whether price increases due to shifts in supply and demand should be labeled inflation is debatable. Some economists contend that such increases merely reflect the market's attempt to allocate scarce resources among users. They also suggest that higher prices for some goods could cause lower prices elsewhere due to shifts in demand. Nevertheless, such changes can supplement rising price levels and certainly complement other types of inflation.

THE RECENT AMERICAN EXPERIENCE: UNEMPLOYMENT AND INFLATION

During the past 15 to 20 years, the economy has moved through several phases of economic activity including recession, nagging unemployment, stable prices, full employment, inflation, stagflation, disinflation, and even some months of deflation. During this time, various doses of monetary and fiscal measures have been applied in an effort to stabilize the level of economic activity, reduce unemployment, promote a healthy rate of economic growth, and stabilize the price level. A review of past developments provides insight into our current problems.

Economy in Transition

After seven years of *chronic unemployment* and relatively stable prices following the 1958 recession, the economy entered a transition phase in the winter of 1965–1966. By the middle of 1965, unemployment had fallen below 5 percent and by the end of the year it had dropped to 4.1 percent, approaching the full-employment level for the first time in at least seven years. It appeared that the nation was moving from an economy of persistent unemployment and idle capacity to a condition of full employment and high utilization of capacity characterized by shortages of skilled labor, scarcity of certain materials, and inflationary pressures.

Early in December 1965, the Federal Reserve Board raised the discount rate, the rate at which it lends to banks, as a protective step against the clouds of inflation it foresaw on the economic horizon. Its action was both praised and criticized. During most of 1966, the Federal Reserve continued to apply some brake against inflation by tightening the money supply. This action

contributed to the "money crunch" of 1966, which had a substantial impact on the construction industry.

By January 1966, unemployment fell to 4.0 percent and in February it was down to 3.9 percent, the first time the full-employment level had been reached in more than seven years. The Johnson Administration faced a serious problem of deciding whether it should continue its expansionary fiscal measures or shift to anti-inflationary measures, which, of course, might slow economic expansion.

Inflation: 1966–1968

After much discussion and analysis, the Johnson Administration took only limited precautionary measures against inflation. The Administration largely rejected the idea of increasing taxes or reducing federal spending, and wage and price controls appeared to be an extreme. It did little to encourage or supplement the Federal Reserve's tighter money policy. On the other hand, the Administration did not sit by idly and do nothing. Early in 1966, it rescinded existing excise tax cuts on automobile sales and telephone service. It also provided for an accelerated method of corporate tax collection and other minor measures to help avert inflation. But the Administration primarily relied on "jawbone" tactics to persuade businesses and unions to implement voluntary wage-price guideposts. Not until it became apparent that the price level was increasing at a 4-percent annual rate did the Administration take further action by suspending the 7-percent tax credit on new investment and the accelerated depreciation measures.

Although the price increases slowed down a bit toward the end of the year, the Consumer Price Index (CPI) showed an annual increase of 3.4 percent. In December 1966, unemployment measured 3.8 percent of the civilian labor force compared to 4.0 percent 12 months earlier.

Mini-Recession—Early 1967. The price level (CPI) stabilized in the latter part of 1966 and the first quarter of 1967. It was evident that the economy was slowing down because the GNP during the first quarter of 1967, in terms on constant dollars, actually declined. This mini-recession of 1967, as it has frequently been labeled, resulted primarily from a decline in the rate of private investment.

Although the President, in the 1967 *Economic Report* issued in January of that year, mentioned the need for a 6-percent surcharge on personal and corporate income taxes to combat the inflationary tendency in the economy, the Administration did not push the measure to any degree in Congress. Many government officials, economists, and others naturally felt that inflation had subsided and cited the fact that the feat had been accomplished without any sizeable tax increase, drastic cut in government spending, or imposition of compulsory wage and price controls. In fact, by the end of 1966 and in the first

quarter of 1967 the Fed was again displaying a more liberal attitude toward the creation of credit. It decreased the discount rate, for example, from 4.5 percent to 4 percent in April 1967. The Administration also relented. As a stimulant to the sluggish economy, it restored the 7-percent tax credit on new investment six months ahead of schedule.

Inflation Resumes—Mid-1967. The joys of stable prices, however, were short-lived because by the second quarter of 1967 the CPI resumed its upward movement. By the end of 1967, the CPI had risen sufficiently to show a 3-percent increase for the year, and unemployment was down to 3.5 percent. As a result, members of the Administration and others again began to talk about the need for restraint. Some government officials even suggested that direct controls of various kinds might be needed to cool the economy if management and labor did not hold wages and prices in check. In the latter part of 1967 and early 1968, the Federal Reserve moved toward a tighter money position by raising reserve requirements for member banks and moving the discount rate back to 4.5 percent.

The Income Tax Surcharge—1968. In his *Economic Report* of 1968, President Johnson called for the imposition of a 10-percent surcharge on personal and corporate income taxes as a means of combating inflation. The size of the proposed surcharge was increased from 6 to 10 percent because signs of an overheated economy were more in evidence. The proposed bill to institute the tax became embroiled in a Congressional hassle as to whether it was better to increase taxes or reduce federal spending. As a result of prolonged hearings and debate, final action on the bill was delayed until June 1968, when Congress imposed a 10-percent surcharge on personal and corporate income taxes to be effective until June 1969. Congress made the surcharge retroactive to April 1, 1968 for individual income and January 1, 1968 for corporate income.

The surtax had a greater impact on savings than expected, however. As consumers continued spending for goods and services, especially for new cars, the rate of savings fell sharply. Fixed investment for plant equipment, which increased moderately in the first half of 1968, accelerated in the second half. Capital spending was no doubt spurred by the feeling that the 7-percent investment credit might be suspended as an anti-inflationary measure.

By mid-1968 a number of national wage negotiations had taken place, adding to the cost-push inflationary pressures. The shortage of skilled labor, and even unskilled labor, was evident. Average hourly wage gains of 7 percent in manufacturing industries during the year, plus a reduction in savings, offset the impact of the income tax surcharge. Consequently, labor unit costs rose sharply.

These developments, of course, caused prices to continue their upward momentum, so that by the end of 1968 the CPI had risen 4.7 percent. Thus, in spite of the addition of a strong fiscal measure to accompany somewhat

restrictive monetary measures, there was little success in arresting the upward movement of prices in 1968.

The New Economic Policy

In 1969, with prices and wages continuing to rise, the Federal Reserve adopted a more restrictive policy. As a result of various monetary measures, the rate of growth of the money stock declined. Through a series of changes, the Fed increased the discount rate from 5.5 percent in December 1968, to 6 percent in April 1969. By the summer of 1969 the prime rate for commercial loans offered by banks reached 8.5 percent, and the interest rate on federal funds approached the 10-percent level. The CPI in the first half of 1969 rose at an annual rate of 6.3 percent.

Gradualism. With the arrival of the Nixon Administration, inflation became the nation's number one domestic issue. President Nixon adopted a policy of *gradualism* to bring inflation under control. He wanted to achieve stable prices without seriously disrupting the growth in economic activity. Among other measures, he asked Congress to retain the 10-percent tax surcharge that was due to expire in June 1969. The Administration and Congress together balanced the budget, which in fact, even ran a slight surplus in fiscal 1969. They cut defense and other government spending, while the Fed tightened the money supply. Although there was some discussion about the need for wage and price restrictions of some type, the President shied away from either formal or informal wage-price measures. By the end of 1969, it was apparent that the measures employed to "cool off" the economy had been effective in slowing down production. But they had not been as effective in slowing down the rate of inflation. Although the real Gross National Product (GNP) declined in the fourth quarter of 1969, prices continued to increase at a rate of 6 percent.

With certain reservations, the forecasts for 1970 were favorable. It was the hope of the President's Council of Economic Advisers that the inflationary rate, which had been around 6 percent, would decline to 3.5 percent by the end of the year. Economic measures designed to cool the economy and bring about a reduction in inflation were expected to result in a slightly higher level of unemployment, up from 3.5 percent to, perhaps, 4.5 percent of the civilian labor force.

The economy did cool off in the first half of the year for a number of reasons, including a decline in business investment, a cutback in defense spending, a tightness of money, and a slowdown in housing starts. The price level, however, continued to rise at the undesirable rate of more than 5 percent annually. Measures designed primarily to arrest demand-pull inflation failed to contain cost-push price pressures. Unemployment increased more than anticipated and reached a rate of 5.5 percent by midyear. These unfavorable developments left the Nixon Administration in the position of deciding

whether to continue anti-inflationary measures and risk the possibility of higher unemployment or shift to expansionary measures and risk the resurgence of inflationary pressures.

Unfortunately, the economy did not rebound in the second half of the year. Unemployment for 1970 averaged 4.9 percent and by the end of the year had reached 6 percent. Although 1970 was officially labeled a recession year, the CPI still managed to increase by 5.9 percent.

In the late months of 1970, the Administration shifted its emphasis to expansionary measures. A number of steps were taken to increase effective demand. Earlier in the year, the personal and corporate income tax surcharge was allowed to lapse. Subsequently the Administration encouraged the Federal Reserve to liberalize the money supply. In addition, Congress enacted an accelerated depreciation schedule to spur business investment. The Fed lowered discount rates several times, moving them down to 4.75 percent within three months. Meanwhile, the Administration announced that the federal deficit for fiscal 1971 would be in excess of $18 billion and that the projected budget deficit for fiscal 1972 would be $11.6 billion. These deficits, of course, were being permitted as a means of stimulating the economy. The Administration hoped that because the economy was in a state of less than full employment any resulting increase in effective demand would not evoke demand-pull inflationary pressures. The Administration, however, was concerned about cost-push price pressures. Consequently, in early 1971 it began "jawboning" as a means of holding the price line, and more was heard about the possibility of wage and price guideposts and an income policy.

The Game Plan. Economic forecasts for 1971 were good but not spectacular. The Council of Economic Advisers set year-end goals of 4.5-percent unemployment and a 3.5-percent rate of inflation. The economic "game plan" was to restore full employment and stable prices by mid-1982. Measures designed to attain that growth rate, remove the production gap between potential and actual output, and eliminate excess unemployment could very well add to price pressures and cause the rate of inflation to accelerate. The task of reaching stable prices became even more difficult because the construction, auto, railroad, and tin can industries had recently negotiated wage increases of 30 percent or more spread over a three-year period. Similar wage concessions in the steel industry in the summer of 1971 led to an immediate 8-percent average increase in steel prices. Some members of Congress, who recommended in early 1971 that President Nixon use the authority given to him in 1970 to impose wage and price restrictions, renewed their efforts after the steel settlement.

In July 1971 Congressional hearings on the state of the economy, a spokesman for the Administration said that it was not going to reach its year-end goals of disinflation and reduction of unemployment because prices had been stickier and unemployment more stubborn than anticipated. A month

later, in response to an inquiry of what the Administration was going to do about inflation and unemployment, the Secretary of the Treasury stated that the Administration was not going to impose compulsory wage and price controls, adopt voluntary wage-price guideposts, increase government spending, or reduce taxes.

Wage and Price Controls of the 1970s

Economic pressures regarding prices, wages, and the balance of payments brought about a change of attitude in the White House by mid-1971.

Phase I: The 90-Day Freeze. With the knowledge that progress on his economic game plan was being stifled by substantial wage and price increases, President Nixon in August 1971, made drastic and sweeping changes of domestic and international economic policies. Among other measures, he declared a 90-day freeze on all prices, wages, and rents, temporarily suspended the right to convert dollars into gold, imposed a 10-percent surcharge on imports, and froze a scheduled pay increase for government employees. He also sought to reinstate tax credits as a means of stimulating investment and jobs and asked Congress to reduce personal income taxes and repeal the 7-percent excise tax on automobiles. The President established a Cost of Living Council to work out details for restoring free markets without inflation during a transition period following the freeze.

Phase II: The Control Period. The 90-day freeze was followed by a Phase II control period, in which a Pay Board and a Price Commission established by President Nixon would monitor and control wage and price increases. Both agencies included representatives of labor, management, and the general public. Each was to work out, respectively, what it considered to be permissible noninflationary wage and price increases. The Pay Board subsequently established a 5.5-percent annual wage increase as a maximum. It did allow that certain exceptions could be made to the 5.5-percent figure.

The Price Commission indicated that it was going to attempt to hold overall price increases to 2.5 percent annually. Since the President did not desire to set up an elaborate formal structure of wage and price controls, such as existed during World War II and the Korean Conflict, much of the stabilization program had to depend on voluntary compliance. The Cost of Living Council exempted most business firms and most workers from any reporting requirements. Others, however, were required to report changes in prices and wages. Larger firms, moreover, had to notify the Price Commission and/or the Pay Board of changes ahead of time.

The effectiveness of the wage and price controls in combating inflation can be gauged somewhat by the fact that, during the six months prior to the freeze, prices increased at an annual rate of 4.5 percent. In the five months

following the freeze, they increased at an annual rate of 2.2 percent. The price level for 1972, during which price controls existed for the entire year, increased 3.3 percent.

The figures in Table 2-1 and Figure 2-1 clearly show the inflationary period starting in 1966. From 1960 to 1965, for example, prices rose at an average annual rate of 1.3 percent. From 1965 to August 1971, prices rose at an average annual rate of more than 4.7 percent. Figure 2-2 shows price increases in average annual percentage increments, categorized as creeping, jogging, and galloping inflation.

Although employment increased substantially during the 1960s, the amount and rate of unemployment, after dwindling early in the decade, rose

TABLE 2-1

Employment, Unemployment, and Prices

Year	Total Civilian Employment[a]	Unemployment[a]	Unemployment Rate	CPI (1982–84 = 100)	Inflation Rate[b]	Discomfort Index
1965	71,088	3,366	4.5%	31.5	1.9%	6.4
1966	72,895	2,875	3.8	32.4	3.4	7.2
1967	74,372	2,975	3.8	33.4	3.0	6.8
1968	75,920	2,817	3.6	34.8	4.7	8.3
1969	77,902	2,832	3.5	36.7	6.1	9.6
1970	78,678	4,093	4.9	38.8	5.5	10.4
1971	79,367	5,016	5.9	40.5	3.4	9.3
1972	81,153	4,882	5.6	41.8	3.4	9.0
1973	85,064	4,365	4.9	44.4	8.8	13.7
1974	86,794	5,156	5.6	49.3	12.2	17.8
1975	85,846	7,929	8.5	53.8	7.0	15.5
1976	88,752	7,406	7.7	56.9	4.8	12.5
1977	92,017	6,991	7.1	60.6	6.8	13.8
1978	96,048	6,202	6.1	65.2	9.0	15.1
1979	98,824	6,137	5.8	72.6	13.3	19.1
1980	99,303	7,637	7.1	82.4	12.4	19.5
1981	100,397	8,273	7.6	90.9	8.9	16.5
1982	99,526	10,678	9.7	96.5	3.9	13.6
1983	100,834	10,717	9.6	99.6	3.8	13.4
1984	105,005	8,539	7.5	103.9	4.0	11.5
1985	107,150	8,312	7.2	107.6	3.8	11.0
1986	109,597	8,237	6.9	109.6	1.1	8.0
1987	112,440	7,425	6.1	113.6	4.4	10.5
1988	114,968	6,701	5.4	118.3	4.4	9.8
1989	117,342	6,528	5.2	124.0	4.6	9.8

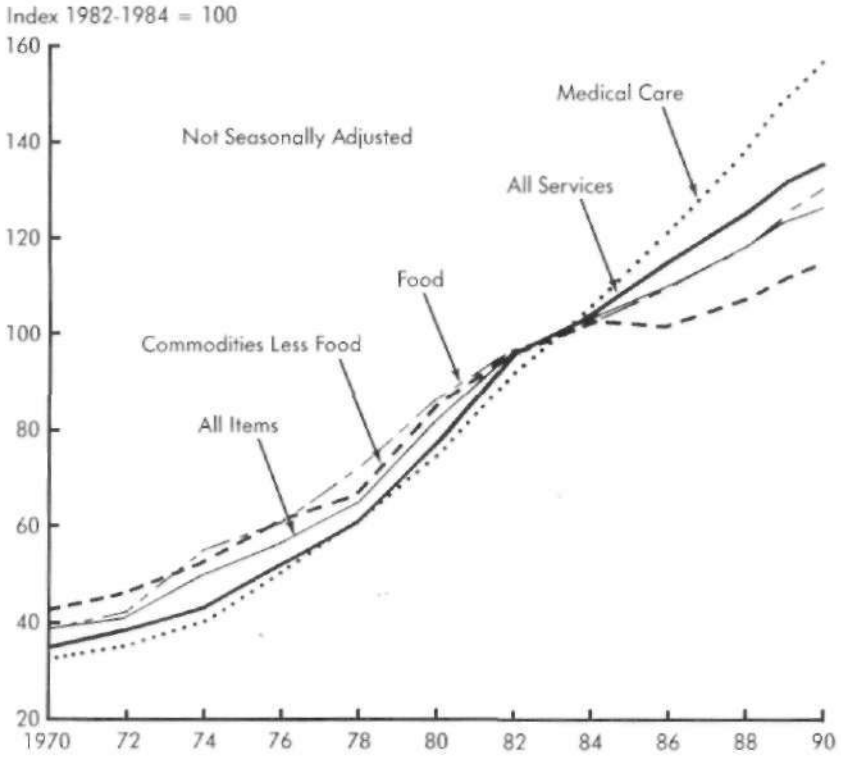
[a]In thousands.

[b]Changes are from December to December.

SOURCE: *Economic Report of the President* (1990) and *Economic Indicators* (February 1990).

FIGURE 2-1

Consumer Prices



SOURCE: *Economic Report of the President* (1990).

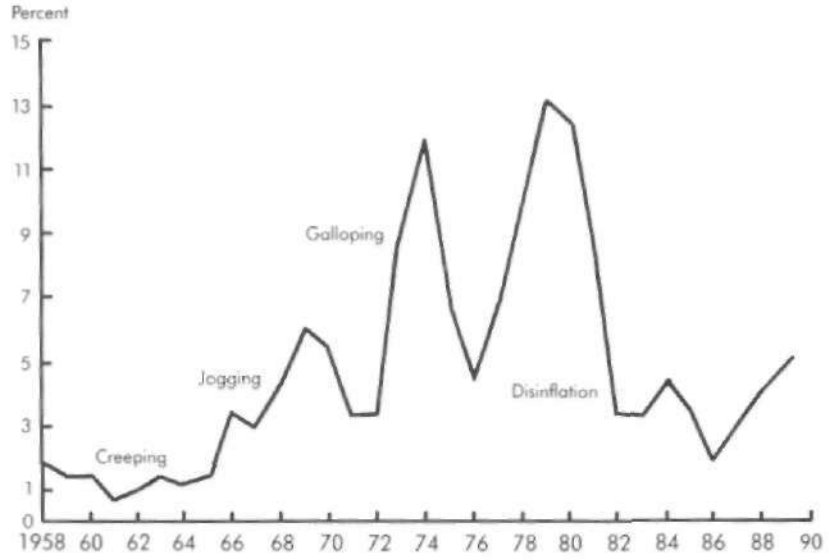
in the next few years. In Table 2-1, note the net increase of over 2.0 million in unemployment between 1969 and 1971.

Phase III: Voluntary Guideposts. In January 1973, the President removed compulsory controls and announced Phase III, which in effect reestablished voluntary guideposts for price and wage increases. The guidepost figures used at that time were 2.5 percent and 5.5 percent annually for prices and wages respectively.

Phase IV: The Second Price Freeze. The removal of compulsory Phase II controls proved to be premature, however. During the first five months after decontrol, the CPI rose at an annual rate of nearly 9 percent. Consequently, in June 1973, President Nixon declared a 60-day freeze on prices, while leaving

FIGURE 2-2

Annual Inflation Rate



SOURCE: *Economic Report of the President* (1990).

wages unaffected. Instead of ending the freeze on all goods at the end of the 60-day period, the Administration unfroze prices selectively and imposed Phase IV controls on various categories of goods and services at different times before and after the 60-day period.

Again, large firms were required to give a 30-day prenotification of price increases. Unlike Phase II, however, firms did not have to wait for approval by the Cost of Living Council before putting such increases into effect. But the Council had authority to delay proposed price increases indefinitely, and it reserved the right to reexamine prices at any time.

The Cost of Living Council established as a new base period for comparing prices the fiscal quarter prior to January 12, 1973, when the Administration had removed Phase II controls. Price increases equal to dollar cost increases subsequent to the base period were to be permitted by Phase IV. No allowance was to be made for a profit mark-up on these cost increases. Controls were imposed industry by industry, thus providing more flexibility than was available under Phase II. At the time of the imposition of Phase IV, several high Administration officials indicated that they hoped controls could be removed by the end of 1973. As it turned out, most of the controls were removed by

early 1974. Unfortunately the CPI rose by 8.8 percent in 1973. Higher fuel prices and an increase of almost 20 percent in food prices further aggravated inflation.

The Recession of 1974–1975

In spite of efforts to temper inflationary pressures, the price level continued to rise during 1974, reaching double-digit figures within a few months.

Upon taking office in the summer of 1974, President Ford declared that controlling inflation was to be one of the prime targets of his Administration's economic policy. He held a summit conference of legislators, cabinet members, business and labor leaders, and economists to develop a strategy for controlling inflation. Among the many and varied suggestions put forth at the conference were a tax surcharge, tighter money, a balanced budget, higher interest rates, reductions in federal spending, wage-price guideposts, and a return to wage-price controls. Before the Administration had an opportunity to implement any of these measures, however, the recession of 1974 deepened sufficiently to cause the President to play down the problem of inflation to concentrate on expansionary measures to offset the adverse effects of the recession. Particularly distressing was the growing rate of unemployment, which reached 7.9 percent in January 1975. But in spite of the recession, the CPI rose 12.2 percent during 1974.

As the economy deteriorated over the next few months, it became evident to President Ford and his economic advisers that the country was actually in a recession. Demand-pull price pressure had abated, but a number of sizable wage settlements combined with the setting of administered prices caused double-digit inflation to continue in response to cost-push, structural, and social inflationary pressures in the economy.

It had become apparent to all that the economy had slipped downward from *stagflation* to *slumpflation*, that is, from a condition of inflation with very low or no growth to one of inflation with declining economic activity. To counteract this decline, President Ford abandoned his plans to reduce federal spending and balance the budget. Early in 1975 he accelerated a public employment program and recommended an extension of unemployment compensation. He presented Congress with a $349.4 billion federal budget that included a huge $52 billion deficit. The budget also contained a $16 billion tax reduction and other measures to offset growing unemployment. By that time the real GNP had declined for its fifth consecutive quarter. Income taxes were reduced by $23 billion and other expansionary measures were suggested by economists, business people, labor leaders, and Congress.

Economists dealing with the problem suddenly found themselves facing a new economic reality. Previously, they were confident they knew what measures to use either to expand the economy during a recession or to combat inflationary pressures during times of economic expansion. When recession and inflation occurred simultaneously, however, a condition with which they

had very little experience, they faced a real dilemma. Should the Administration, for example, emphasize anti-inflationary measures and risk aggravating unemployment, or should it emphasize expansionary measures and risk higher prices? Not only were there no foolproof measures for dealing with slumpflation, but there was no way to know which condition posed the more serious problem—unemployment or inflation.

Fortunately, the rate at which prices increased dropped in 1976 to 4.8 percent, the first time in the 1970s that it had been under 5 percent except during the freeze-control period of 1971–1972.

Double-Digit Inflation Again, 1979–1981

Shortly after he took office in January 1977, President Carter proposed a $30 billion economic package, including tax rebates, to stimulate the economy and reduce the existing 7-percent unemployment rate. Before the package received Congressional approval and could be implemented, however, the employment picture brightened. With the improvement in the economy, the inflation rate unfortunately began to edge upward and reached 6.8 percent in 1977. When the inflation rate continued to rise early in 1978, President Carter sought voluntary cooperation from business, labor, and consumers to exercise restraint. At the same time, the Federal Reserve tightened the money supply. When these measures failed to restrain price increases, the President late in 1978 announced a set of voluntary wage-price standards. These standards sought to hold wage increases to 7 percent annually and keep price increases one-half of one percent under the average annual increase in the base period 1976–1977. Increased prices for OPEC-controlled oil, food shortages, and climbing home prices and mortgage rates caused the CPI to increase by 13.3 percent in 1979.

Double-digit inflation continued into 1980, and the prime interest rate approached 20 percent. On March 14 the President, exercising his authority under the Credit Control Act of 1969, invoked compulsory credit restraints of various types—most implemented through the Federal Reserve System—on consumers, banks, and businesses. Many of these restrictions were removed by mid-1980, when the 18-plus percentage inflation rate of the first quarter began to ease off.

Disinflation of the 1980s

By the time President Reagan took office in January 1981, inflation was back to a double-digit level, and the prime interest rate stood at 20-plus percent. As other Presidents had before him, he declared inflation to be a major economic problem and vowed to bring about its demise. Within a few days President Reagan dismantled the wage-price standards of the previous administration

and disbanded the Council on Wage and Price Stabilization, preferring to rely on market forces to hold prices and wages in check.

Over the next several months the new administration invoked certain supply-side measures to encourage savings, stimulate investment, and motivate worker effort, many of which came to be contained in the Economic Recovery Tax Act of 1981. In addition, the Administration lessened some of the more burdensome government regulations on business.

In the meantime, in an effort to combat inflation, the Federal Reserve maintained tight control over the money supply, eventually pushing the discount rate to 14 percent by June 1981. The Fed maintained the discount rate at double-digit levels until October 1982, which helped keep the prime rate charged by banks above 15 percent, thereby discouraging borrowing. At the same time the Administration tried to reduce federal spending. The severe recession of 1982 saw unemployment exceed 10 percent from September 1982 to April 1983. As a result, many unions moderated their wage demands and even agreed to give back certain previously gained benefits in return for a reduction in layoffs.

The combination of tight money and credit, high interest rates, decline in loan demand, wage concessions, and other adverse factors associated with the recession of 1982 broke the back of inflation. The inflation rate declined to 3.8 percent in 1982 and remained below 4 percent through 1986, when it fell to 1.1 percent. During 1987 and 1988, however, the rate rose to 4.4 percent. In the first half of 1989, the inflation rate exceeded 5.0 percent, but for the year it averaged 4.6 percent.

Early in 1990, with the federal deficit still in excess of $100 billion annually, the large Third-World debt still on the scene, a number of bank and savings-and-loan (S&L) institution failures occurring, sizeable recent increases in the U.S. money supply, and the rebound in oil prices, there was some apprehension in the financial markets about the likelihood of renewed inflation.

THE PROBLEMS

It is obvious from the foregoing discussion that there has been an inflationary trend in the U.S. economy since 1966. Demand-pull pressures resulting from exuberant consumer spending, record-level private investment, and large federal deficits during a period of full employment caused the initial round of inflation. Since that time, cost-push, structural, and social elements have all added to inflationary pressures.

Perhaps it would be simple enough to arrest inflation by applying conventional but stringent monetary and fiscal measures. But there is always the danger of applying the brakes too strongly and causing the economy to turn downward. Furthermore, any time anti-inflationary measures have an adverse

effect on employment, it is frequently poverty-level wage earners, teenagers, and nonwhite workers who are thrown out of work. Consequently, anti-inflationary measures begin to take on political overtones. Thus, the problem or task is to find the proper amount and mixture of monetary, fiscal, and psychological measures to arrest inflation but not cause unemployment to rise above the 4- to 5-percent level consistent with full employment. In this regard it should be remembered that prices are considered to be stable if the CPI does not move more than 2 percent annually.

Early in 1990, Federal Reserve Board Chairman, Alan Greenspan, and other board members separately indicated that they were committed to a long-range target of a zero rate of inflation. At the same time hearings were being held in Congress on the Neal Bill, which would commit the Fed to reduce the rate of inflation one percentage point each year until a zero rate of inflation was reached.

THE TRADE-OFF

Once the economy is at full employment, it is difficult to ride its crest at the point where unemployment is minimized and the price level stabilized. In 1966, the President's Council of Economic Advisers, and others thought that the nation could lower the level of unemployment below the then current goal of 4 percent to 3.5 percent or less without substantially affecting prices, which were then at about a 3-percent level.

The debate about the trade-off between unemployment and an increase in prices renewed interest in the concept known as the *Phillips Curve*. The British economist A. W. Phillips developed this curve in his studies of the relationship between the level of unemployment and annual wage increases for the United Kingdom during the years 1861 to 1913. From his studies he found that when unemployment was high, money-wage increases were smaller, and when a low level of unemployment existed, wage increases were larger. The curve expressing this relation became known as the Phillips Curve. Based on his analysis, Phillips concluded that the money-wage level would stabilize with a 5-percent unemployment rate.

In the 1960s American economists began to apply a Phillips-type curve to changes in prices, rather than wages, in relation to unemployment. This application became more meaningful especially when the level of unemployment began to fall consistently below the 4-percent level. Subsequently, economists constructed a number of Phillips Curves showing the relationship between price changes and the level of unemployment. One must be cautious when interpreting these curves because they are constructed with various assumptions. There is no guarantee, for example, that because a given relationship occurred in the past, it will hold precisely in the future. Figure 2-3 depicts a Phillips Curve developed by Paul Samuelson in the mid-1960s. It shows price

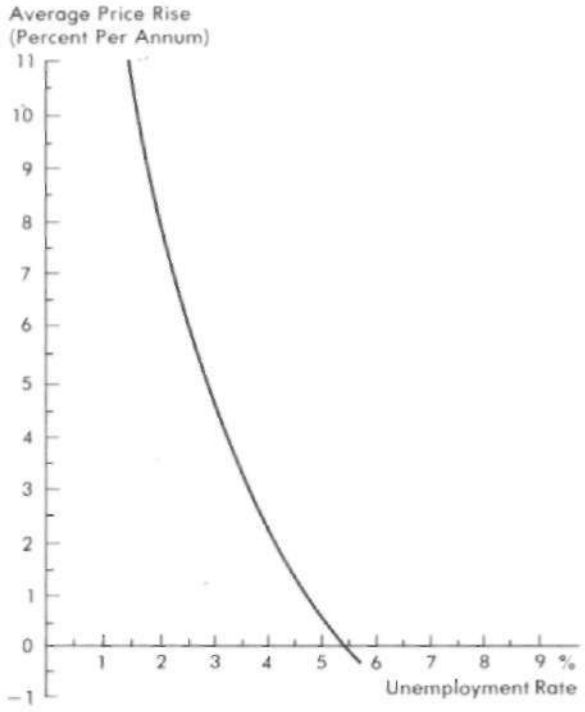
stability at about 5.5-percent unemployment and a 2-percent price rise associated with 4-percent unemployment.

Several other economists developed Phillips Curves about that same time. One shows a price rise of about 2.5 percent associated with unemployment of 4 percent. Another shows a price increase of around 4 percent associated with a 4-percent unemployment rate. Still other more recent examples, depict a rightward shifting of the Phillips Curve, indicating an upward shift in both the price level and unemployment rate as one is traded off against the other, as shown in Figure 2-4.

The Phillips Curve certainly has some validity when inflation is demand-pull in nature. But the relationship between unemployment and price changes does not hold so well when inflation is of a cost-push or structural variety. A

FIGURE 2-3

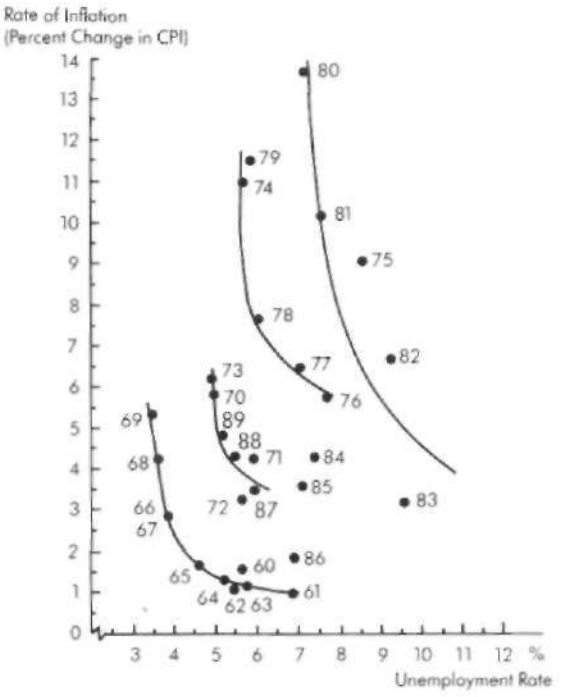
Modified Phillips Curve for the United States



SOURCE: "Analytical Aspects of Anti-Inflation Policy," *The Collected Papers of Paul A. Samuelson*, Vol. II, MIT Press, © 1966 by the Massachusetts Institute of Technology.

FIGURE 2-4

Unemployment-Inflation Experience, 1960–1989



SOURCE: Data from *Monthly Labor Review.*

Phillips Curve for the years 1970–1983, for example, would definitely move the price-unemployment line of best fit upward and to the right. Figure 2-4 shows a more recent set of Phillips Curves reflecting such movement. The 1983 *Economic Report of the President* noted that the inflation threshold unemployment rate probably lies between 6 and 7 percent. Some analysts challenge the Phillips Curve and its relationship between unemployment and price level changes. It should be remembered, however, that the Phillips Curve was originally designed to measure the relationship between demand-pull inflation and unemployment, not cost-push, structural, or other varieties of inflation.

A side-effect of watching changes in unemployment and prices has been the development of the *Discomfort Index*, which measures the level of unemployment and the rate of inflation combined. Table 2-1 shows the rising

level of discomfort as both unemployment and inflation continued to increase in the 1970s and into the 1980s.

COST ESTIMATE OF INFLATION

Whether because of normal expansionary forces in the economy, an insufficient tightening of the money supply, the lack of voluntary restraint on the part of consumers and investors, or the failure of successive Administrations and Congress to adopt more stringent fiscal measures sooner, the price level, with the exception of one year, has risen in each of the past 20 years more than it did in any of the preceding 15 years at a cost to American consumers of several billion dollars. Some idea of the cost of this inflation for one year, such as 1989, can be estimated as shown in the following sections.

Higher Prices for Goods and Services

The consumer price index was 4.6 percent higher in 1989 than it was in 1988, meaning that consumers paid out $152 billion more in 1989 in the form of higher prices for goods and services, as spending for consumer goods was $3,470 billion in 1989: ($3,470 billion ÷ 1.046) x 0.046 = $152 billion. The cost of business investment in machinery, equipment, and buildings figures to almost $34 billion more if a 4.6-percent price markup is applied to the $777 billion gross private domestic investment in 1989. Government outlays—federal, state, and local—rose by $46 billion due to the higher prices for goods and services purchased by all levels of government. The inflationary impact on net imports was about $2 billion. In short, the 1989 GNP of $5,233 billion was $230 billion more than it would have been had prices not risen in 1989.

At first glance it may seem as if the cost of inflation in 1989 was $230 billion, but it must be kept in mind that economists consider prices to be stable when the CPI, or the GNP implicit price deflator, moves 2 percent or less on an annual basis. That being the case, inflationary pressures in excess of 2 percent in 1989 increased the price level by 2.6 percent (4.6 – 2.0 = 2.6). Given this premise, in 1989 the total cost of inflation would be only $133 billion, instead of the $230 billion cited in the previous paragraph.

Depreciation of Savings

There is more to consider, however, because inflation affects not only current income but also savings held by individuals, businesses, and the government. For example, in 1989, households held total savings of more than $8,000 billion in the form of time-and-savings deposits in banks; savings and loans; credit unions; federal, state, and local government securities; and corporate bonds

and notes.[1] Consequently, the price rise of 4.6 percent for 1989 depreciated the value of these savings by $352 billion: ($8,000 billion ÷ 1.046) x 0.046 = $352 billion. If only 2.6-percent excess inflationary pressures were applied, the value of these savings still eroded by $207 billion. This adverse effect on inflation on individual savings, however, was offset to some extent by the fact that the more than $3,000 billion combined mortgage, installment-credit, and other-debt burden of individuals eased somewhat as a result of inflation.

Loss of Insurance Protection

Inflation also reduces the amount of protection provided by life insurance policies. At the end of 1989, for example, Americans held more than $6,720 billion worth of life insurance protection.[2] Thus, the 4.6-percent depreciation in the purchasing power of the dollar lessened the protection provided by these policies by a total of $296 billion or $171 billion, using the 2.6-percent figure.

Total Costs of Inflation

For the items discussed above, the approximate total cost, in the form of higher prices or loss of value, of inflation in 1989 was somewhere between $511 billion and $878 billion, as indicated in Table 2-2.

Fortunately, since 1982 inflation has abated from its double-digit levels and near double-digit levels. Otherwise the costs of inflation would be much greater.

TABLE 2-2

Total Costs of Inflation, 1989

Category	Cost or Loss (in billions) at 4.6 percent		Cost or Loss (in billions) at 2.6 percent	
Current goods and services		$230		$133
Consumer goods	$152		$98	
Private investment	34		20	
Government	46		26	
Imports	−2		−1	
Personal savings		352		207
Life insurance protection		296		171
Total cost		$878		$511

1. *Statistical Abstract of the United States* (1989).
2. *Statistical Abstract of the United States* (1989).

Balance of Trade

Inflation can also have an adverse effect on the economy by affecting the nation's balance of international trade. This is especially so when domestic prices are rising faster than are those abroad. In such a case the relatively greater increase in prices in the United States deters foreigners from purchasing our goods and services, thus causing our exports to decline. On the other hand, the relatively lower price of foreign goods and services encourages Americans to purchase foreign goods, causing imports to increase. A change in the export-import ratio can affect jobs, profits, and incomes. Any attempt to measure the net effect of such changes is difficult, however. Any disadvantage to particular groups has to be offset by any gains to the total economy through the utilization of the law of comparative advantage. Nevertheless, Table 2-3 gives some indication that the United States compares favorably to other major nations with respect to inflation.[3]

Other Effects of Inflation

Offsetting the cost of inflation, of course, are gains in the economy attributable to those measures that incidentally brought on inflationary conditions. Because the current inflationary binge started in the late 1960s, both the number and percent of unemployed have been on an upward trend, as shown in Table 2-4. In the eight-year period from 1982 through 1989, however, unemployment fell by about 4 million and total employment rose by 19 million.

TABLE 2-3

Consumer Price Indexes for Selected Countries

	1989 Index (1982–1984) = 100
United States	124.0
Canada	129.3
Japan	108.6
France	129.3
Italy	153.7
United Kingdom	139.0
West Germany	109.9
European Community	131.5

SOURCE: *Economic Report of the President* (1990).

3. For some insight into the effects of hyper-inflation elsewhere in the world, see pages 356–359.

As a result of some measures contributing toward inflation, such as high-level investment, large budget outlays for social programs, and the occurrence of substantial federal deficits, money wages in general were higher and profits greater. In fact, some economists claim that higher prices must be offset in large part by higher incomes because the total cost of production is equal to our national income.

TABLE 2-4

Employment, Unemployment, Prices, and Wages 1965–1989

Year	Total Employment (in thousands)	Unemployment (in thousands)	Unemployment Rate	CPI (1982–84 = 100)	Rate of Inflation[a]	Weekly Money Wage[b]	Real Wage (1977 $)	Percentage Increase in Real Wage
1965	71,088	3,366	4.5%	31.5	1.6%	95.45	183.21	2.7%
1966	72,895	2,875	3.8	32.4	2.9	98.82	184.37	0.6
1967	74,372	2,975	3.8	33.4	3.1	101.84	184.83	0.2
1968	75,920	2,817	3.6	34.8	4.2	107.73	187.68	1.5
1969	77,902	2,832	3.5	36.7	5.5	114.61	189.44	0.9
1970	78,678	4,093	4.9	38.8	5.7	119.83	189.94	–1.3
1971	79,367	5,016	5.9	40.5	4.4	127.31	190.58	1.9
1972	82,153	4,882	5.6	41.8	3.2	136.90	198.41	4.1
1973	85,064	4,365	4.9	44.4	6.2	145.39	198.35	0.9
1974	86,794	5,156	5.6	49.3	11.0	154.76	190.12	–4.1
1975	85,846	7,929	8.5	53.8	9.1	163.53	184.16	–3.1
1976	88,752	7,406	7.7	56.9	5.8	175.45	186.85	1.5
1977	92,017	6,991	7.1	60.6	6.5	189.00	189.00	1.2
1978	96,048	6,202	6.1	65.2	7.6	203.70	189.31	0.2
1979	98,824	6,137	5.8	72.6	11.3	219.91	183.41	–3.1
1980	99,303	7,637	7.1	82.4	13.5	236.10	172.74	–5.8
1981	100,397	8,273	7.6	90.0	10.3	255.20	170.13	–1.5
1982	99,526	10,678	9.5	96.5	6.2	266.92	168.09	–1.2
1983	102,510	10,717	9.5	99.6	3.2	280.35	171.26	1.9
1984	106,702	8,539	7.4	103.9	4.3	294.05	170.48	0.9
1985	108,856	8,312	7.1	107.6	3.6	299.09	171.07	–1.4
1986	111,303	8,237	6.9	109.6	1.9	304.85	171.07	0.4
1987	114,177	7,425	6.1	113.6	3.6	312.50	169.28	–1.0
1988	116,677	6,701	5.4	118.3	4.1	322.36	167.81	–0.9
1989	119,030	6,528	5.2	124.0	4.8	335.20	166.52	–0.8

[a]Year-to-year changes as opposed to December-to-December changes.

[b]Average weekly earnings in nonagricultural industries.

SOURCE: *Economic Report of the President* (1990) and *Economic Indicators* (January 1990).

Moreover, inflation made it easier for individuals, banks, government agencies, and insurance companies to meet their fixed obligations. But many of these gains came at the expense of the consumer.

Inflation in 1989 cost American consumers somewhere between $98 billion and $152 billion, depending on whether one uses a 4.6-percent inflation factor or a 2.6-percent factor. Even using the minimum cost for consumer outlay, depreciation of savings, and loss of protection on life insurance policies, higher prices still cost American consumers, directly or indirectly, $511 billion in 1989.

One might still argue that if prices rise, current incomes have to rise by a similar amount because our total factor cost (wages, rent, interest and profit) is equal to our national income. But granting that the 1989 cost of inflation was completely offset by the yearly increase in income, there was still the large loss, $378 billion (calculated using the 2.6-percent inflation factor), resulting from depreciation of savings and the loss of protection from life insurance and annuity policies.

Regardless of how the pie is sliced or costs allocated, American consumers have paid dearly for the excessive inflation of recent years. From most indications, it would have been far better for the economy to have taken more stringent monetary and fiscal measures in the early stages of price pressures in an effort to combat the pending inflation. In the absence of voluntary restraint by consumers and investors or a reduction in spending by the government, an earlier increase in personal and corporate income taxes would have been beneficial and may have been less expensive for consumers in the long run. Our total payout for goods and services would have been less; excessive inflation might have been avoided; and there would have been no long-term loss in the form of depreciated savings, no decline in protection from insurance policies and annuities, and no inflated replacement costs of assets.

Another example of how inflation hits the pocketbook of the average American can be seen in what has happened to average weekly earnings. Between 1972 and 1989, for example, the wages of workers in nonagricultural industries increased $198.30 per week, or 145 percent, but the purchasing power of the wages declined by $31.89, or 14 percent. Moreover, before income tax indexation was adopted in the mid-1980s, the higher money wage moved many workers into a higher income tax bracket, further obliterating their real wage gains. Workers in many categories have had smaller money-wage increases than the average. Consequently, it becomes obvious that the average worker made little economic gain during this inflationary period.

Because the cost of inflation is somewhat nebulousness, and the measures necessary to combat it are seldom politically popular, politicians are usually hesitant to take the vigorous steps necessary to prevent rising prices. It is easy enough to arouse public and political sympathy and support for measures to bolster the economy when an excessive number of people are suffering from unemployment. It is difficult, however, to generate enough public sentiment

and political concern to do more to combat inflation, even though the small resulting loss to each of 250 million consumers may exceed the total loss suffered as a result of excess unemployment (above the 4 to 5 percent unemployment level) of a million or more workers.

Some Problems of Disinflation

Although a slowing of the inflation rate, known as disinflation, is generally good for most segments of the economy, it can cause hardships for certain elements and individuals. It especially affects debtors who had anticipated paying off their debt with inflated dollars.

Four broad segments of the economy have been particularly hurt by the disinflation of 4 percent or less during the 1980s: (1) several Third-World countries, (2) the energy industry, (3) farmers, and (4) their respective creditors. Third-World countries borrowed heavily in the 1970s at high interest rates. They anticipated that their expanding economies would provide funds to pay off their loans. The softening of prices, along with lower sales, however, brought less income from their exports, especially from the United States. This drop in income meant they had less foreign exchange to meet payments of their debt, including interest, to commercial banks, foreign government agencies, and international organizations. This situation forced the debtor countries to borrow additional funds just to meet interest payments, and it caused their creditors to restructure many loans and reschedule principal repayments, because a number of these nations were on the verge of default. Disinflation also forced many of these nations to impose austerity measures to improve their domestic economies. Particularly hurt were nations, such as Mexico, that had relied heavily on the sale of oil for foreign exchange. Their creditors, especially commercial banks, were hurt in turn by the need to reschedule loans, allocate more funds to contingency reserves for loan losses, and write off, or write down, some of these loans as assets on their balance sheets.

The dramatic drop in oil prices, which contributed so much to the disinflation, hurt the domestic energy sector of the U.S. economy. Many companies in the petroleum business were forced out of business as oil prices declined. Widespread layoffs and wage reductions had a dampening effect on the entire oil-producing area of the U.S., especially in Texas, Oklahoma, and Louisiana. Numerous bankruptcies and the inability of oil producers to repay loans (originated in the high-oil-price era of the 1970s) had a very negative effect on commercial banks and other creditors of energy companies. As a result several bank failures occurred as banks wrote off or wrote down loans.

Another sector hard hit by disinflation, and to some extent actual deflation, was U.S. agriculture. During the 1970s and early 1980s, based on strong domestic and foreign sales, high land values, and encouragement by creditors, farmers (like the oil producers and Third-World nations) borrowed heavily at

high interest rates to expand output and purchase new land and equipment. When domestic and foreign sales slackened and agricultural prices dropped in the 1980s, many farmers found it difficult to meet interest and principal payments on their loans. Moreover, declining land values made creditors reluctant to renew farm loans. As a result more farmers were forced out of business in the 1980s than at any time since the Great Depression of the 1930s. In addition, a large number of farm banks and commercial banks in farm areas failed. Even the elaborate federal farm banking and credit system had to ask for special funding help from the federal government in 1986.

Millions of U.S. workers experienced layoffs and wage reductions, in part, because of disinflation. Lower prices and the squeeze on profits in the steel, auto, petroleum, shoe, and airline industries forced unions into "wage give backs" in order to protect jobs and to help companies continue to operate. In spite of such concessions by both managerial and hourly employees, widespread layoffs still took place in many of these industries.

Although the problems discussed in this section resulted from disinflation or deflation, in large part they originated with the overspending, overborrowing, and overconfidence associated with a prior inflationary period.

CONCLUSION

Until 1981 our attempts to arrest or slow inflation had not been successful. Although compulsory wage and price controls in 1971 and 1972 did contain price increases within the 3- to 4-percent range, shortly thereafter inflation erupted again. Even though inflation did taper off a bit in 1976 to 5.8 percent, it moved up the double-digit level by 1977 and remained there until 1981. The rise in the price level was abetted by the OPEC price hikes, food shortages, hefty wage increases, widespread indexation of wages and other income, government spending, and a decline in productivity per labor hour. This happened in spite of Presidential jawboning; voluntary, but formal wage-price standards; short-term credit restraints; and high interest rates. Even the recession of 1980 did not slow the rate of inflation.

Abnormally high interest rates, some reduction in government spending, imposition of supply-side measures, and a severe recession in 1982 caused price pressures to abate. The disinflation that occurred was accompanied by moderation in wage demands, salary reductions, and even give-backs by some union members. The CPI showed a 10.4 increase in 1981, as measured on a year-to-year basis, but it increased only 8.9 on a December-to-December basis. In 1982 the CPI rose 3.9 on a December-to-December basis, and remained

between 3 and 4 percent through 1986. In both 1987 and 1988 it rose 4.4 percent. In the first quarter of 1989, the CPI rose more than 5 percent at an annual rate, as the Federal Reserve continued its tight money policy to hold down the rate of inflation. Inflation for the year averaged 4.6 percent. In the spring of 1990, inflation was above 5 percent, and the Fed continued to maintain relatively high interest rates.

Although the country has experienced some disinflation for the past few years, and even a few isolated months of deflation, the price level is still nowhere near the low rates of the late 1950s and early 1960s before the current inflationary surge started. We still have some way to go before we can say inflation has been licked and we have restored price stability. In fact, the chairman of the Federal Reserve Board and others were still much concerned about reinflation occurring in spite of the slowdown in economic activity in the last quarter of 1989 and the first quarter of 1990.

QUESTIONS FOR DISCUSSION

1. Should some type of wage and price controls or guidelines be reimposed as a means of preventing future inflation?
2. Do higher prices paid by consumers for goods and services represent a real economic cost to the economy, or are they merely a redistribution cost?
3. Are losses from depreciated savings and reduced insurance protection that result from inflation real economic costs?
4. In your judgment, which is the more serious problem, inflation or unemployment?
5. Do you agree with the provisions in the Economic Recovery Tax Act of 1981 that indexed federal income tax payments to the price level (CPI) to prevent the taxpayer from paying higher tax rates on inflated (nonreal) income?
6. Under the circumstances at the time, do you think the Carter Administration should have taken stronger anti-inflationary measures in the late 1970s? Why or why not?
7. What additional anti-inflationary measures, if any, would you suggest for today's economy?
8. Do you think that a 2-percent rise in the Consumer Price Index is consistent with price stability?
9. Do you think that our unemployment goal today should be 4 percent or something closer to the inflation threshold rate of unemployment?

10. Do you think that all wage rates should be tied to the CPI, as they are in certain industries, to protect the purchasing power of workers?

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3

PRODUCTIVITY

WHY THE DECLINE? DO WE NEED AN INDUSTRIAL POLICY?

One of the most discussed and debated topics of the 1990s will be productivity. For decades the U.S. economy, because of its high productivity, was considered to be the eighth wonder of the world, and our standard of living was the envy of many people around the globe. Prior to the mid-1970s Americans took the nation's high rate of productivity for granted. But the decline in productivity had moved this issue to the forefront by 1980, when it became the subject of debate in the Presidential campaign. The Joint Economic Committee of Congress described productivity as the "economic linchpin of the 1980s." Productivity along with capital formation was a major topic of the 1988 *Economic Report of the President*. It was again debated during the 1988 Presidential campaign. Much was heard about the need for an industrial policy. In more recent years Congress has considered numerous import-protection measures. Why? What caused the change? What is the problem? How can it be remedied?

The economist often defines production as the addition to or creation of utility. *Utility* is the want-satisfying ability or usefulness of a good or service.

There are several types of utility. *Form utility* arises by changing the shape or composition of a good, as for example, when manufacturers change iron ore, glass, rubber, plastic, and other materials into an automobile, or processors convert fats and chemicals into soap, thereby enhancing the usefulness of the materials.

Because goods are more useful in some places than in others, *place utility* has to do with the process of getting goods from the original producers to the ultimate consumers. Thus, production involves merchandising, transportation, and selling. The possession of a good or service may be more valuable to a person at one time than at another. A home, for example, is more useful to a couple during the family formation stage, when the children are young and growing, than it is when they are first married or retired and they can be satisfied with an apartment. Thus, the finance company or bank that provides the mortgage money for them to purchase the home creates *time utility*. It is producing, as is the investment firm that underwrites a bond issue for a manufacturer to obtain funds to construct a new plant.

Doctors, lawyers, teachers, pilots, and entertainers, for example, engage in production, by performing services. They, too, are producing and contributing to the GNP, as are workers on assembly lines or operators at their word processors. Government workers are also part of the productive process.

In fact, today 54 percent of our total production for consumption is in the form of services. Moreover, 77 percent of the civilian labor force is engaged in the production of services, and it is anticipated that this will increase to 80 percent by 1995. One can gather from these figures that services contribute much to our GNP and standard of living and provide many employment opportunities.

HOW PRODUCTIVITY IS MEASURED

Technically, productivity is a measure of the relationship between output (production) and one or more of the units of input, such as land, labor, or capital, used to generate the output. Productivity may be stated in terms of bushels per acre, Btu's of energy per investment dollar, or output per machine. More commonly, however, it is measured in terms of productivity per labor hour.

Contrary to popular belief, productivity per labor hour does not necessarily measure changes in the efficiency of labor in the productive process. The source of increased productivity may be additional capital investment, technological development, or improved labor efficiency. Regardless of the source of the increase (or decrease) in production, it is convenient to measure it in terms of productivity per labor hour. One reason for this practice is the ease with which labor input can be quantified and related to output. Productivity per labor hour may be stated in units of physical output, such as tons per labor

hour, or in the dollar value of output, such as $22.30 per labor hour. Many times productivity per labor hour, whether measured in units of output or dollars, will be expressed in terms of annual percentage changes. It may also be shown as an index number, which measures the output per labor hour of every year compared to a base year percentage value of 100.

Regardless of how it is measured, productivity can be increased by spending more investment dollars on improved machinery and equipment, by applying better management techniques, by eliminating waste, by using labor and other resources more efficiently, by improving the skills and training of workers, and, lastly, by developing pride in one's work.

PRODUCTIVITY DETERMINES INCOME

Income flows from production as payments for services rendered. These payments can be in the form of wages, rent, interest, and profits. Consequently, America's production provided this country with the highest income per capita in the world for many years. Growth in total production (the GNP) and real income results from the combination of growth in labor hours plus growth in productivity. Figure 3-1 shows that in the past 30 years nearly 80 percent of America's real GNP growth resulted from increases in productivity. Since the late 1970s, however, productivity has contributed much less to the nation's growth.

Productivity and GNP Growth

Most studies indicate that productivity is the engine or driving force of economic growth. Usually they designate productivity as the independent variable on a regression analysis chart showing the relationship between productivity growth and GNP growth, as shown in Figure 3-2. This relationship continues to the present day.

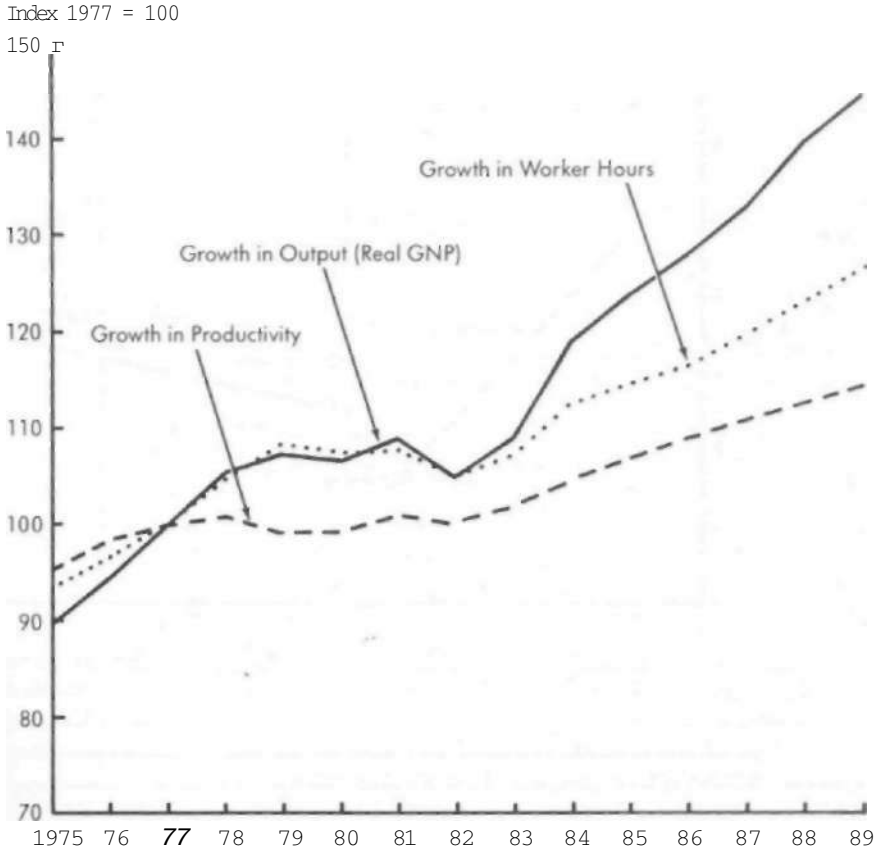
Some critics object to this method, however, maintaining that in such a relationship GNP growth should be the independent or causal variable. They contend that if there is sufficient demand for output (GNP), productivity will increase via innovation, investment, and other ways to satisfy the demand. These critics feel that demand and GNP growth stimulate productivity growth. Whichever way one chooses to argue regarding cause and effect, there is little doubt that a positive relationship exists between productivity growth in manufacturing and GNP growth.

Investment and GNP Growth

It stands to reason that output and productivity can be increased by investing more and more in new and more efficient machinery, equipment, and production facilities. In this regard economists often relate investment as a percentage

FIGURE 3-1

Growth in Output, Productivity, and Worker Hours
(Private business sector)



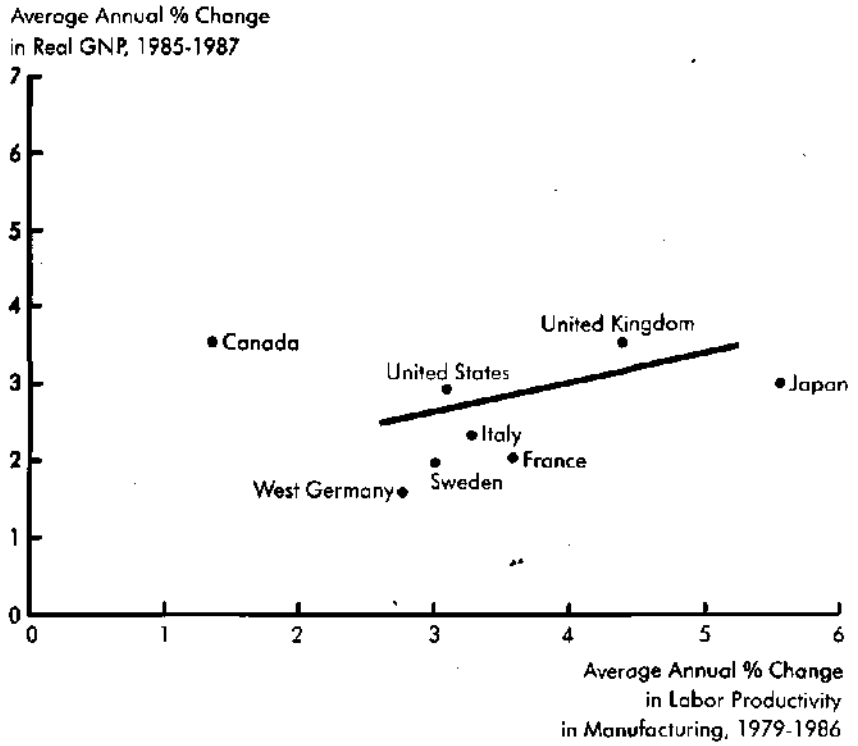
SOURCE: *Economic Report of the President* (1990).

of GNP in a positive fashion to the growth of the GNP. There is little doubt, for example, that the use of earth movers and cranes in construction work, the application of lasers in scientific experiments, the development of electronics in communications, the use of computer centers in steel production, and the employment of machines and robots for assembly and other routine work have enhanced productivity and reduced cost.

Another method of measuring productivity as it affects economic growth is to relate fixed capital investment to productivity, as shown in Figure 3-3,

FIGURE 3-2

Productivity Growth and GNP Growth



SOURCE: *Productivity Perspectives* (1989).

and then relate productivity growth to GNP growth, as shown in Figure 3-2. This relationship still applied into 1990.

Productivity and Business Cycles

The business cycle affects productivity. During the first half of the expansion stage of a business cycle, productivity tends to be high. In this period profits rise, investment and capacity increase, materials and labor are readily available, and input prices are moderate. Productivity tapers off, however, during the latter half of the expansion, when businesses become complacent as they experience record profits. They add readily to their work forces, labor turnover rises, and material shortages appear. In this period, managers push toward

FIGURE 3-3

Investment in Fixed Capital and Productivity Growth

SOURCE: *Statistical Abstract of the United States* (1989) and *Productivity Perspectives* (1989).

maximum capacity, press marginal equipment into operation, and become less careful about cost and output efficiencies. Productivity continues to fall during the early stages of the contraction (recession). During this time, final production demand begins to weaken, work forces are maintained, total output declines, and costs continue to rise.

Productivity tends to improve, however, during the latter stage of a recession. This reversal in productivity occurs as profits dwindle and managers become more efficient and cost conscious. As workers are laid off and an attempt is made to maintain the same total output with a smaller work force, productivity per labor hour rises. During this time businesses substitute capital

for labor, try new techniques, and pay more attention to productivity to prevent profits from dwindling or losses from occurring. Table 3-1 shows the change in the pattern of labor productivity over the business cycle as evidenced by the recession of 1982.

Although productivity changes tend to peak, decline, and then rebound over the phases of the business cycle, unfortunately the annual growth rate in productivity between business cycle peaks has been declining over the past few decades. As a result, some of the gains made during the cycle are lost between cycles. The long-run decline in the growth in productivity per labor hour is shown in Figure 3-4.

WHAT HAS HAPPENED TO PRODUCTIVITY?

Something happened to American productivity in the 1970s. After decades of high-level production and world leadership in per-capita income, the rate of increase in productivity in the U.S. economy slowed markedly. This change in the increase in productivity is obvious in Figure 3-5 on page 64, which shows that since the mid-1960s actual productivity has fallen substantially below the trend established in previous decades.

TABLE 3-1

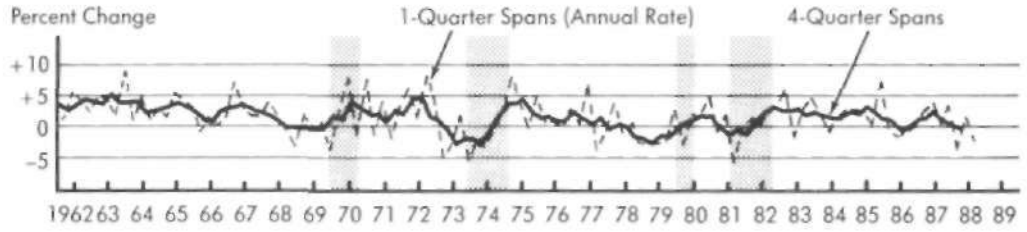
Quarterly Changes in Output per Hour of All Persons for the U.S. Private Business Sector, 1979–1989

Quarter	1979	1980	1981	1982
1	–1.9%	1.5%	5.9%	–0.4%
2	–2.6	–2.9	2.2	–1.6
3	–2.1	1.3	4.7	1.7
4	–0.6	1.0	–4.1	3.0
Annual	–1.2%	–0.3	1.4	–0.4
Quarter	**1983**	**1984**	**1985**	**1986**
1	2.0%	4.4%	2.2%	7.7%
2	5.9	2.6	2.9	–0.4
3	1.2	–0.3	–3.7	–1.4
4	2.8	–0.1	–1.0	–0.8
Annual	2.7	2.5	1.8	2.2
Quarter	**1987**	**1988**	**1989**	
1	0.3%	3.5%	1.1%	
2	2.7	–3.4	1.6	
3	3.9	1.7	1.7	
4	0.6	–2.0		
Annual	0.8	1.0		

SOURCE: *Economic Indicators* (March 1989).

FIGURE 3-4

Change in Output per Hour, All Persons, Business Sector



SOURCE: *Business Conditions Digest* (June 1989).

Between 1948 and 1965, productivity in the private business sector of the U.S. economy increased 2.6 percent annually. In the period 1965 to 1973, the rate declined to 2.0 percent annually. Since 1973, productivity growth in the private business sector of the economy has averaged less than 1 percent per year, as shown in Table 3-2. In several quarters it showed negative growth rates.

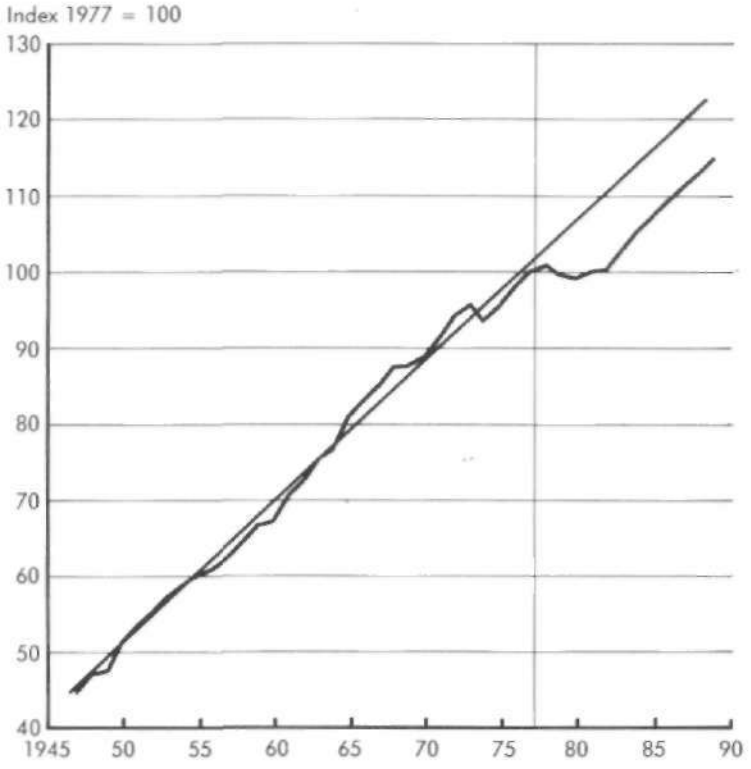
This slowdown has had a pronounced effect on the nation's total GNP, per capital income, and standard of living. According to testimony before the Joint Economic Committee in the early 1980s, a study estimated that if the productivity trend did not reverse, the average American household would lose $8,500 by 1988.[1] Various estimates indicate that if the U.S. had maintained its 1947–1967 growth rate, its GNP in 1988 would have been $400 billion higher. Several nations, have surpassed the U.S. in per capita GNP and income, and in recent years the gaps between the U.S. and some other nations have narrowed, as shown in Table 3-3.

The productivity slowdown also aggravated our higher than usual rate of inflation by contributing to the cost of production during the 1970s and early 1980s. Lower productivity increases the per-unit cost of output, causing producers to raise final product prices or suffer reduced profits. According to Senator Lloyd Bentsen, Chairman of the Joint Economic Committee, "In the absence of dramatic gains in productivity, our efforts to stem inflation cannot succeed." The inflationary impact of productivity on prices is evident in Figure 3-6, which shows higher percentage changes in output prices for those industries with the lowest rates of productivity.

1. Notes from the Joint Economic Committee by C. Jackson Grayson, Chairman, American Productivity Center, Inc. (March 2, 1979).

FIGURE 3-5

Output per Hour in the Private Business Sector
(1947–1988 actual levels and 1950–1969 trend extrapolated)



SOURCE: *Economic Report of the President* (1990).

TABLE 3-2

U.S. Labor Productivity Growth, Private Business Sector

1948–1955	3.4%	1978	0.8%	1982	–0.7%	1986	2.3%
1955–1965	3.1	1979	–1.2	1983	2.4	1987	1.2
1965–1973	2.3	1980	–0.3	1984	2.6	1988	1.7
1973–1977	1.0	1981	1.5	1985	2.0	1989	1.1

SOURCE: *Economic Report of the President* (1990) and *Economic Indicators* (March 1990).

TABLE 3-3

Per Capita GNP, Selected Countries, 1987
(In constant U.S. dollars)

	Per Capita GNP 1987	Per Capita GNP as a % of U.S. Per Capita GNP, 1987	Per Capita GNP as a % of U.S. Per Capita GNP, 1970
Switzerland	$27,571	111%	66%
United States	18,413	100	100
Norway	19,172	92	62
Canada	19,322	90	78
Sweden	18,295	76	86
West Germany	18,471	76	64
Denmark	19,000	76	67
Australia	11,588	69	57
Japan	16,360	69	40
France	15,224	67	61
Netherlands	14,561	65	50
Belgium	13,977	59	56
United Kingdom	11,718	57	45
Spain	7,314	50	20
Italy	11,026	44	36

SOURCE: *Statistical Abstract of the United States* (1989).

From another point of view, inflation itself adds to the replacement cost of depreciated assets. Depreciation reserves based on the original costs of assets are usually inadequate to cover the higher replacement costs of the assets. This discrepancy forces the producer to seek other funds to make up the difference between the reserves and the cost of the replacement assets. The higher cost of the replacement assets, unless they are much more efficient, adds to the cost of future production.

WHY THE DECLINE IN PRODUCTIVITY?

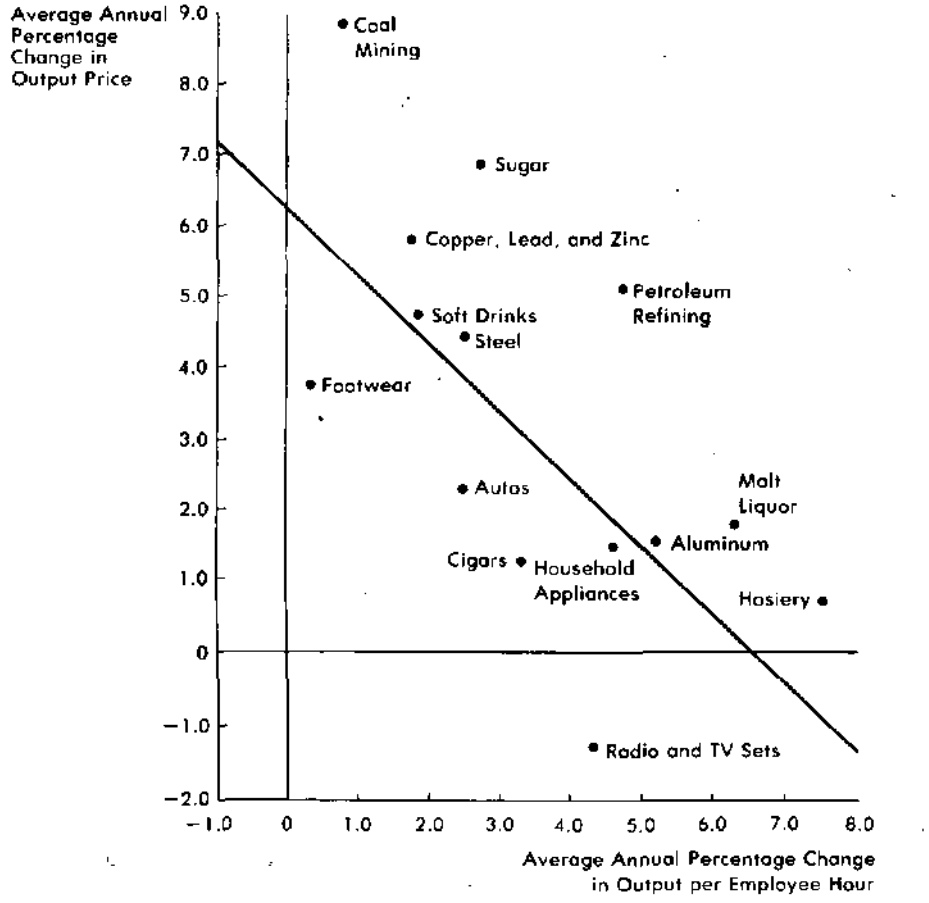
Among the many causes cited for the decrease in the rate of productivity growth in the U.S. are the following.

Decline in the Capital-to-Labor Ratio

The capital-to-labor ratio is the ratio of nonresidential capital stock to total hours worked in the private nonfarm sector. From 1948 to 1973, a high rate of private investment led to a growth in the capital-to-labor ratio amounting to almost 3 percent per year. Since 1973, because of lower rates of investment

FIGURE 3-6

Prices and Productivity: Average Rates of Change, 1960–1975



SOURCE: *Productivity Perspectives* (1983).

and large additions to the labor force, the growth rate of the capital-to-labor ratio has declined to 1.75 percent per year. This slower growth of capital stock reduced productivity growth by one-half of a percentage point per year. Consequently, the trend rate of labor productivity growth declined from 3 percent annually in the 1948–1973 period to 1.5 percent from 1973 through 1978, and to negative levels in 1979, 1980, and 1982. In spite of economic

recovery, the average annual productivity gain between 1983 and 1989 has been less than 1.2 percent.

Change in Composition of the Labor Force

The shift in the age-sex composition of the labor force since the mid-1960s has somewhat reduced productivity. During the 1970s and 1980s, the addition of many young workers to the labor force, plus the addition of many others, including women, who lacked work experience or skills, slowed down the growth of productivity. It is estimated that such demographic shifts in the labor force accounted for a 0.4 percentage point reduction in the actual productivity growth rate between 1965 and 1973. As the workers who entered the labor force at that time became older and more experienced, that reduction in productivity during the late 1970s and into the 1980s narrowed to a 0.33 percentage point decline.

Impact of Economic and Social Regulations

Economic and social regulations have contributed in many ways to the productivity slowdown. Economic regulations, such as those covering pricing and entry in transportation, precluded labor and capital from flowing into uses that had a relatively high value. Socioeconomic regulations that attempt to reduce pollution, provide greater worker safety, and change income distribution tend to slow down conventional productivity growth. Improvements in the form of purer air, cleaner water, and noise abatement are generally not included in measured output. Thus, when businesses divert an increased fraction of labor and capital resources to these uses, measured productivity is reduced. The petroleum and primary metals industries were particularly hard hit by regulations, suffering severe reductions in productivity. It is estimated, for example, that economic regulations have reduced total annual productivity growth by 0.3 percentage point since 1973. Table 3-4 shows the decline in average annual growth in gross domestic production per hour for major sectors of the U.S. economy.

In addition, there are substantial indirect costs associated with social regulation, such as litigation expenses, reduced innovation because of uncertainties of meeting standards, and the cost of keeping records and filling out forms. A federal report on regulatory reform estimates that regulation compliance costs business somewhere between $50 billion and $150 billion annually. Federal environmental regulations alone imposed a direct cost to business of more than $25 billion annually in the mid-1980s. Professor Murray Weidenbaum, Director of the Center for the Study of American Business, concluded that federal regulations cost business more than $100 billion annually in the 1980s.

TABLE 3-4

Average Annual Growth in GDP per Hour, Major Sectors of the U.S. Economy 1948–87, Selected Periods
(In percent per year)

Sector	1948–73	1973–79	1979–87	1973–87	Change, 1948–73 to 1973–87
Business	2.88	0.63	1.36	1.05	–1.83
Goods-producing industries	3.21	0.55	2.39	1.60	–1.61
Farming	4.64	3.09	6.86	5.22	0.58
Mining	4.02	–7.05	2.34	–1.79	–5.81
Construction	0.58	–1.99	–1.67	–1.80	–2.38
Manufacturing	2.87	1.43	3.49	2.61	–0.26
Durable goods excluding nonelectrical machinery	2.56	1.12	2.09	1.67	–0.89
Nonelectrical machinery	2.03	0.70	11.54	6.76	4.73
Nondurable goods	3.40	1.90	2.13	2.03	–1.37
Non-goods-producing industries	2.49	0.73	0.66	0.69	–1.80
Transportation	2.31	1.06	–0.50	0.17	–2.14
Communications	5.22	4.25	5.09	4.73	–0.49
Electricity, gas, and sanitary services	5.87	0.05	1.44	0.84	–5.03
Trade	2.74	0.76	1.68	1.28	–1.46
Wholesale	3.14	0.10	2.39	1.40	–1.74
Retail	2.40	0.87	1.21	1.06	–1.34
Finance, insurance, and real estate	1.44	0.28	–1.15	–0.54	–1.98
Business and personal services	2.17	0.34	0.36	0.35	–1.82
Government enterprises	–0.15	0.94	–0.15	0.32	0.47
General government	0.21	–0.28	0.37	0.09	–0.12
Nonprofit organizations	0.31	–0.88	–0.32	–0.56	–0.87
Employment in private households	–0.35	–0.63	1.98	0.85	1.20

SOURCE: Baily, Martin Neil and Robert J. Gordon. "The Productivity Slowdown, Measurement Issues, and Explosion in Computer Power." *Brookings Papers on Economic Activity*, Volume 2 (1988).

Some large firms have indicated that they must employ hundreds, and in some cases thousands, of persons in order to comply with economic and social regulations. One company, for example, reported that it spends $20 million per year to fill out governmental forms.

Decline in Research and Development Spending

The decline in the amount of research and development (R&D) in the U.S. also has contributed to the slowdown in productivity. R&D often leads to innova-

tion and new technology, which results in new products, higher productivity, or lower costs. All of these increase the real GNP. R&D spending decreased from 2.6 percent of real GNP (in 1982 dollars) in the 1970s to 2.2 percent in the 1980s, a decline of nearly 20 percent. If the U.S. had devoted the same percentage to R&D spending in the 1970s as it did in the 1960s, R&D expenditures would have been $13 billion higher. Fortunately, spending on R&D in the 1980s has bounced back to 2.6 percent of real GNP. This decline and recovery are shown in Figure 3-7.

Use of Antiquated Facilities

Insufficient and tardy replacement of depreciated equipment and the lack of an ample supply of additional equipment have resulted in the aging of much of our manufacturing capital stock. This antiquation has forced manufacturers to use older, less productive, and costly marginal equipment and capacity. Studies published in the early 1980s indicated that nearly 40 percent of the plants and equipment in the U.S. economy were over 10 years old, and 16 percent were 20 years of age or older.

From another point of view, 16 percent of all our manufacturing equipment at that time was technologically outmoded, and the figure ran as high as 50 percent for transportation equipment, 30 percent for steel making, and 25 percent for the auto industry. A survey by the National Machine Tool Builder's Association published in 1985 showed that 67 percent of the machine tools used in metalworking industries were at least 10 years old, and 33 percent were over 20 years old. Another study indicated that American business would have to spend $510 billion (in 1990 dollars) within the next five years just to modernize manufacturing facilities.

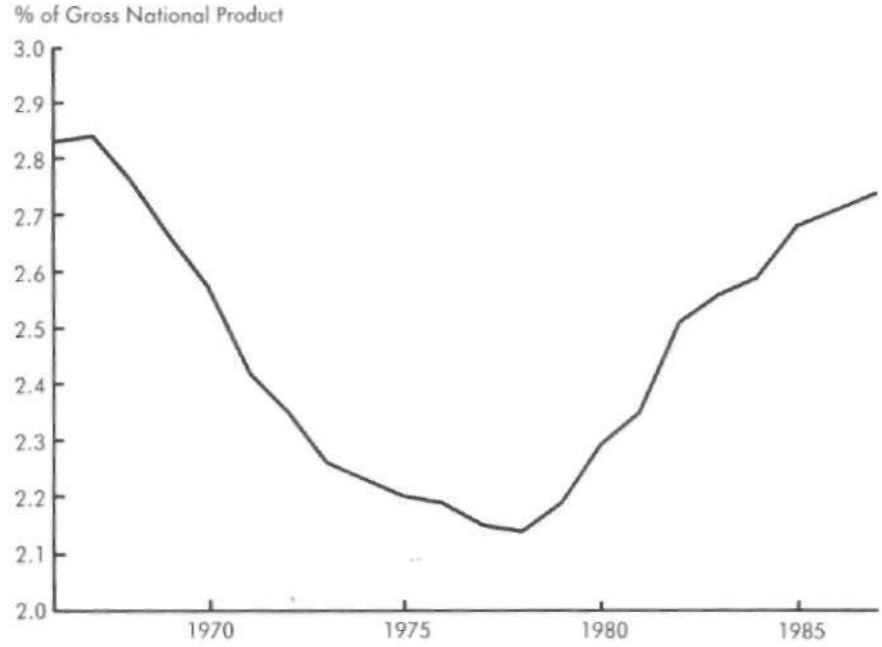
PRODUCTIVITY AND IMPORTS

Not all industries experienced the same decline in productivity growth. Whereas agriculture, communication, and railroads held their own or showed some improvement in productivity, substantial declines occurred in mining, construction, nonrail transportation, and services, especially finance and insurance. But the fact still remains that there has been a general deterioration in the growth of productivity in the U.S. economy in the past decade or more while productivity and product quality of competing foreign producers have been increasing.

Many Americans were startled to learn early in 1980 that our major domestic steel producer, United States Steel Corporation, had entered into a five-year contract to purchase technology from a Japanese steel firm. Today it is common knowledge among experts from industrial nations that the Japanese are the most efficient steel producers in the world. The nation's

FIGURE 3-7

Research and Development, 1966–1987



SOURCE: *Productivity Perspectives* (1989).

economic pride suffered another dent when a survey of American automobile engineers in the mid-1980s indicated that a large number of them felt the quality of foreign cars was superior in many respects to that of American-made cars and that routine assembly work in U.S. cars was sloppy compared to that of most foreign imports. Moreover, many cars or parts sold by U.S. auto firms are now being manufactured abroad.

Who would have dreamed twenty or thirty years ago that by the 1980s the U.S. would import most of its baseball gloves from Asia? Or that one of our largest and strongest labor unions, the United Auto Workers of America, would be seeking legislation to force foreign auto producers to locate plants in America? Today, Suzuki, Kawasaki, Yamaha, and Honda dominate the motorcycle market. American-made Harley-Davidson bikes are much less common. Productivity problems and costs have been in large part responsible for the requests by American manufacturers for restrictions on the importation of autos, steel, shoes, TV sets, and other commodities.

In 1987, imports accounted for 22 percent of the steel, 26 percent of the automobiles, 58 percent of motorcycles and bicycles, 59 percent of the color TV sets, 70 percent of the stereo equipment, 62 percent of the shoes, 25 percent of the apparel, and 46 percent of the musical instruments sold in the United States. Because of cost and productivity advantages, many U.S. producers of shoes, radios, TVs, and stereo equipment operate production facilities in foreign lands or purchase final products abroad for resale in the United States.

The flood of imports caused both the closure of many of our steel-making facilities and pressure for the restriction of steel imports from Japan, the Common Market, and even Third-World nations. Imported autos continue to compete strongly in the U.S. market in spite of Japan's voluntary restrictions on imports to the United States. Strong reaction to the competition from imports has led to the establishment of Japanese auto plants in the United States, Japanese-American joint production ventures, and Congressional consideration of a management- and union-backed U.S. domestic contents bill for autos sold in the United States. Cost disadvantage also brought about the passage of a special tariff on certain motorcycles at the request of that industry. Moreover, in 1989 the steel industry sought legislation to limit steel imports to 16 percent of U.S. sales.

HOW DO WE GET BACK ON THE PRODUCTIVITY TRACK?

To arrest the slowdown in productivity, reduce inflation, promote economic growth, and raise the U.S. standard of living, it will be necessary to adopt some positive measures. These measures must come from several sources: business, consumers, labor, and government.

Increase Investment

Among other changes, a substantial increase in business fixed investment is essential to sustain economic growth and reduce unemployment. To regain this nation's growth in productivity it will be necessary to devote a significantly larger share of current production to replace, modernize, and expand the capital stock of the U.S. economy. Growth is needed particularly in those sectors of the economy producing intermediate goods that are of critical importance to other industries, especially industries producing basic materials and energy, where substitutes exclusive of imports may be difficult to find.

Although it may seem that America invests heavily, investment in the U.S. economy is meager compared to that in some other major industrial nations. In 1987, for example, fixed investment in the U.S. economy amounted to 17.3 percent of our gross national product. But as Figure 3-8 shows, in West Germany the figure was 19.3 percent, and in Japan 28.9 percent of the nation's

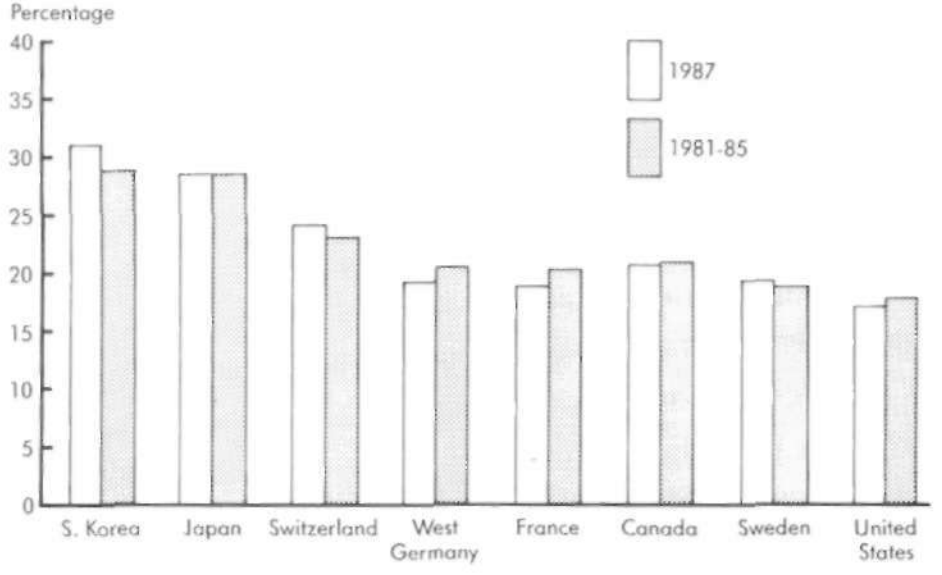
output went into capital formation. Figure 3-9 shows the relationship of investment to GNP in various nations. Over the past two decades those nations with the highest rates of fixed investment have had the largest percentage increases in productivity.

Restoring the earlier 3-percent annual economic growth rate in the capital-to-labor ratio would contribute greatly to our productive growth. But to do this would require a commitment to devote a larger share of our total output to capital formation.

In addition to the expansion of production, employment, and income, society would benefit in other ways from a higher rate of investment. Of particular importance are the expansion of domestic energy production, especially from new sources; the reduction of environmental pollution; the elimination of occupation hazards; and improvement in product safety. Benefits from investment for social goals, such as cleaner air or water, are not included in measured production. Currently 5 to 6 percent of capital expenditures by business is for pollution abatement, which means that a higher total investment is necessary to meet both our output goals and social goals for the U.S.

FIGURE 3-8

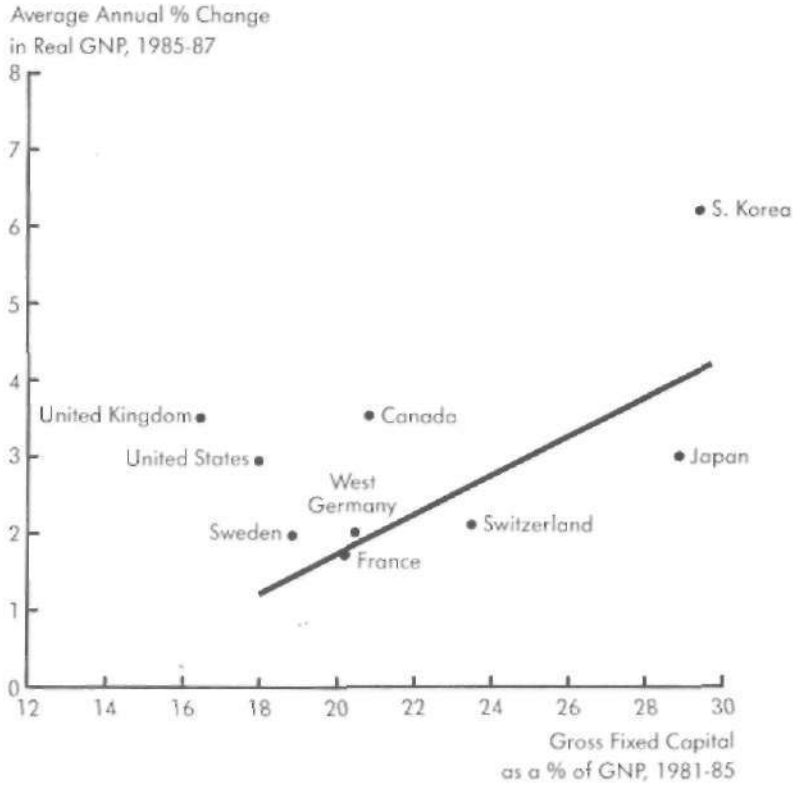
International Investment Patterns
(Fixed capital formation as a percent of GNP)



SOURCE: *Economic Handbook of the Machine Tool Industry* (1988–1989).

FIGURE 3-9

Investment in Fixed Capital and GNP Growth



SOURCE: *Statistical Abstract of the United States* (1989) and *International Financial Statistics* (May 1989).

economy. From another point of view, because environmental improvements, along with increases in product and worker safety, are not included in measured productivity, productivity changes are underestimated.

Establish More Favorable Tax Policies

Government needs to create a more favorable tax policy to encourage investment, which it can do by lowering the cost of capital or by raising its after-tax rate of return. The corporate and personal income-tax reductions provided in the Economic Recovery Tax Act of 1981 were helpful to meet the goal of increased investment. Especially encouraging were the Accelerated Cost

Recovery System, which permitted faster depreciation of assets, and the Investment Tax Credit, which provided specific tax reductions for new investments. These two measures were designed to improve cash flow and lower taxes over the depreciable life of assets. In this regard, however, it must be pointed out the British laws have permitted the instant depreciation of assets (100 percent) since 1973, and the rate of investment there is no better than in the United States.

Some politicians and economists have suggested the use of direct incentives to supplement accelerated depreciation, direct investment incentives, or even direct governmental investment in some ailing industries. Such measures, however, are highly controversial because they require more direct government intervention in the economy. Another suggestion for improved investment is to remove double taxation on corporate profits paid out in dividends.

Encourage Savings

In the previous two decades, Americans saved an average of only 6 to 8 percent of their incomes, a figure that compares unfavorably with the double-digit levels of savings in many Western European countries and Japan. Table 3-5 shows savings as a percentage of income for major industrial countries. The adoption of more employer-sponsored savings plans for employees would be helpful as a means of encouraging savings. Removal or reduction of the double tax on corporate profits that are paid out in dividends, and the exemption of more interest income from federal and state income taxes, would also help to encourage savings. Tax reductions, along with the tax-exempt All Savers Certificates and tax-deferred IRAs provided by the Economic Recovery Act of 1981, were designed to encourage personal savings, with the idea that

TABLE 3-5

Household Savings as a Percent of Disposable Income for Major Industrial Countries, 1980–1990

	1980	1985	1990
Canada	13.3%	13.7%	9.0%
United States	7.1	4.5	5.2
Japan	17.9	16.0	15.5
France	17.6	13.9	12.3
West Germany	14.0	12.7	13.1
Italy	20.9	21.9	20.4
United Kingdom	14.2	9.2	6.9
Average	12.0	9.7	6.9

SOURCE: *World Economic Outlook* (1989) p. 9.

increased savings could be channeled into investment. The Tax Reform Act of 1986, however, reduced most of these tax advantages.

Lessen Regulation

Expansion of deregulation, such as that currently in effect in the airline, banking, and transportation industries, can aid productivity and lower costs. Closer scrutiny of both economic and social regulations such as those of the Environmental Protection Agency (EPA), Equal Employment and Opportunity Commission (EEOC), and Occupational Health and Safety Agency (OSHA) to make sure that their costs and benefits match, can also help to increase productivity and lower costs.

Increase Research and Development

Business needs to invest more in research and development and place greater emphasis on internal expansion rather than acquisition and merger. Much needs to be done as well in the area of product and service innovation in an effort to reduce costs, lower prices, and improve the quality of production.

Improve Managerial Efficiency

There is a crying need for improvement in managerial efficiency if productivity is to be increased. The slowdown in productivity cannot be attributed solely to government interference or worker lethargy. Managers, particularly at the middle and first-line levels, are not maximizing their efficiency. There is a need to apply new and/or better management techniques and adopt managerial methods to improve worker productivity.

Again, it is embarrassing to learn that foreign managers, especially in Japanese-owned plants both in Japan and in America, and even in those plants staffed with American workers, are showing up American managers by insisting on worker discipline and demanding quality work. Perhaps one lesson American managers can learn from their Japanese counterparts is that it is better to insist that work be done right the first time rather than to repeat the job or recall the product.

It is ironic when one remembers the extent to which young potential managers from foreign nations flocked to the United States, especially in the two decades after World War II, to visit its plants and attend its schools to learn the engineering and business techniques developed by U.S. enterprise. Today some of the reverse is taking place. Peter Drucker, the world-renowned management consultant, points out, however, that many of the ideas and techniques being used so successfully by foreigners were actually developed in America. The best lesson Americans can learn from Japanese and German management is how to put these ideas and techniques into practice. In the past few years, American business leaders have come to sense that they can learn

from others, especially in the areas of quality control, human relations, and technology. Figure 3-10 shows America's share of the total number of robots in use, compared with that of Japan and other nations. The figure illustrates that the U.S. must learn to take advantage of new technology to stay competitive. In the U.S. the use of robots has increased considerably. In the three-year period 1985-1987, for example, American businesses installed more than 15,000 robots.

If the United States is to increase productivity in an effort to increase economic growth, improve product quality, combat inflation, and raise the standard of living, workers must participate in the process. Excessive demands for wages and fringe benefits beyond increases in productivity do not solve the nation's productivity problem—they only aggravate it. Consequently, the nation needs moderation in wage demands to keep them more in line with productivity.

The country also needs business to better train workers by offering management-sponsored programs to improve worker skills, requiring more attention to detail, imposing stricter discipline on the job, and helping workers develop pride in their work. In short, Americans need to return to the work

FIGURE 3-10

Robots in Use, 1986

SOURCE: Estimates from the Robotics Industries Association (1987).

ethic. Workers themselves, or through management invitation, have to become more involved with the process of developing and implementing measures to improve productivity. The use of quality circles and quality of work-life groups are good vehicles for this purpose. It may be time also for labor unions and management to mollify their adversary roles and cooperate more in the interest of improving productivity.

The Committee for Economic Development (CED), a private study group, in 1983 released a study suggesting that both government and the private sector can do much to improve productivity.[2] The CED's major public policy recommendations for the government included (1) eliminating unnecessary government constraints on the market system, (2) modifying policies that discourage savings and investment, (3) making basic research an important priority, and (4) continuing economic deregulation in areas in which effective competition is present.

Emphasizing that the private sector plays a critical role in increasing productivity, the CED study had the following recommendations for business and business managers:

1. Every American business should adopt explicit productivity goals to meet both domestic and foreign competitive challenges.
2. Top management should encourage initiative and nurture promising new ideas within the organization.
3. Management should substantially involve employees (and union leadership in companies with unions) in designing and implementing productivity-enhancing policies.
4. Financial incentives for improved productivity should be a common element for both labor and management.

The CED added that an appropriate public policy environment, including moderate noninflationary economic growth, is an essential prerequisite for substantial and sustained improvement in productivity.

Other observers have suggested measures to increase productivity. In order to restore U.S. productivity growth, raise per capita GNP, contain inflation, compete better against foreign products, and improve balance of payments, President Carter in 1980 stressed the need to reindustrialize America. Also in 1980, *Business Week* published a special issue on the subject. President Reagan talked about U.S. competitiveness here and abroad in his 1983 *Economic Report of the President* and subsequently established a Commission on Industrial Competitiveness. In that same year he formed a special committee on productivity and competitiveness. Productivity was also a major

2. *Productivity Policy: Key to the Nation's Economic Future*, Committee for Economic Development (1983).

topic in the President's 1984 report, as was the concept of an industrial policy. His 1989 *Economic Report* still contained much about productivity and technology.

The President's Commission on Industrial Competitiveness delivered its report called *Global Competition: The New Reality* in 1985. It contained a number of measures to improve productivity and competition in domestic and world markets. Among the measures dealing with productivity were the following recommendations:

1. Create a cabinet-level department of science and technology.
2. Increase tax incentives for research and development.
3. Remove antitrust barriers to joint research.
4. Strengthen protection of intellectual property rights.
5. Improve the skill and mobility of the labor force.
6. Increase the use of robots.
7. Increase the number of engineering graduates.
8. Improve the elementary and secondary educational systems.
9. Encourage cooperation between labor and management.

In his 1990 *Economic Report*, President Bush stressed, among other measures, the need for increased savings, reduced capital gains taxes, immigration of skilled labor, more investment in physical and human resources, greater geographic and occupational labor mobility, improved infrastructure, and better education as a means of improving U.S. productivity and industrial competitiveness.

DOES THE UNITED STATES NEED AN INDUSTRIAL POLICY?

Because of the decline in productivity, competition from imports, and high unemployment (particularly the devastating effect on so-called smokestack industries), there has been a growing call for a more formal industrial policy. One definition of an *industrial policy* is any selective government measures that prevent or promote changes in the structure of an economy. Most nations do have an industrial policy of some type, formal or informal. Even the lack of a formal policy is itself a policy of letting competition and the market determine the industrial structure of the nation.

Most formal industrial policies involve one or more of the following objectives:

1. Special aid or privileges for growth or "sunrise" industries, such as high-tech industries. Such incentives may involve low-interest-rate loans, government subsidies for basic research and development, and the allocation of venture capital.

2. Protection for declining or "sunset" industries, such as steel, shoes, and textiles. Such protection may take the form of tax relief, import tariffs, import quotas, and worker retraining and relocation.
3. Targeting of industries. An appropriate authority selects certain industries to receive special aid from the government or private organizations, such as banks.
4. Macroeconomic policy. The government develops favorable monetary and fiscal policies to foster economic development.
5. Nationalization of industry. Nationalization, in which the government takes over and operates the basic industries, is the extreme in industrial policy and is characteristic of socialistic economics.

The United States has always had some type of industrial policy, usually informal. Protectionist tariffs helped early manufacturers in New England, government land grants assisted the construction of railroads, and government subsidies helped build the airlines. The U.S. shipbuilding industry received government aid, and for decades American farmers have received special benefits. On a more formal basis, in the 1930s the National Industrial Recovery Administration established industrial codes regarding output and prices; the Reconstruction Finance Corporation provided long-term, low-interest refinancing; and the Export-Import Bank provided loans and loan guarantees for exporters.

In the mid-1970s there was much discussion about national economic planning at the Congressional hearings that preceded the passage of the Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act). In the 1970s the U.S. Synthetic Fuels Corporation provided funds to promote the development of synthetic fuels. More recently the government bailouts of Chrysler and Continental Bank and the automobile domestic contents bill[3] introduced in Congress are *ad hoc* forms of industrial policy.

Recently, several individuals, organizations, and political groups were advocating a formal U.S. industrial policy. The movement was evident in Congress. Early in 1984, the House Banking Committee approved an industrial policy bill titled the Industrial Competitiveness Act. Representative Ottinger of New York led a "national economic recovery project" to develop a "high production strategy for the United States." Four other House members wrote a master plan called the national Industrial Strategy Act, which would have created an Economic Cooperation Council to solicit the cooperation of government, business, labor, and others to recommend steps to improve U.S. industrial competitiveness. In addition, the act would have established a

3. This would require 70 percent of the parts in autos sold in America to be made in the U.S.

National Industrial Development Bank with authority to lend $12 billion over the following four years and grant an additional $24 billion in loan guarantees. Senator Edward Kennedy developed a similar bill.

President Reagan established a Presidential Commission on Industrial Competitiveness, and industrial policy became an issue in the 1984 Presidential campaign. As late as 1988, with the flood of imports and loss of U.S. jobs, there was still much discussion about adopting an industrial policy for the United States. Moreover, the 1988 Trade Act contains several industrial-policy measures, including the current Voluntary Restraint Agreement (VRA) with Japan. The VRA, which limits Japanese imports of steel into the U.S. markets, is a form of industrial policy, as is a similar agreement limiting the importation of Japanese automobiles.

Industrial Policy in Japan

Some politicians and economists have suggested that the United States ought to have a national industrial policy for productivity similar to Japan's. In Japan there is much planning and cooperation between the government, financial institutions, business leaders, manufacturers, trading companies, managers, and workers regarding the promotion of productivity. For example, the government may request banks to extend long-term, low-interest-rate loans to certain industries. The Ministry of International Trade and Industry (MITI) may recommend direct government aid for some firms or industries. In short, some analysts maintain that the entire Japanese economy is operated like a huge corporation, sometimes referred to as Japan, Inc. The major objectives of this so-called corporation are economic growth, increased exports, and a rise in the Japanese standard of living.

Several advocates of industrial policy have cited the success of Japan. However, it should be noted that although the Japanese have been very successful rebuilding and developing their steel, auto, and TV industries, they have experienced some failures elsewhere. Their shipbuilding industry, of late, has experienced problems, and Japanese agricultural policies have led to one failure after another. Then too, not all of Japan's success is due to the plans and policies espoused by MITI. For example MITI's original plan for the auto industry was to restructure it so that only two firms would operate, Nissan and Toyota. Instead the industry blossomed via competition, and now Japan has more auto producers than any nation in the world.

One important reason for the early and current success of MITI policies was the need for Japan to restructure after World War II. The Japanese did so, of course, with the help of engineering, scientific, economic, and managerial aid from the U.S. and elsewhere. Now that Japan has caught up and has gone ahead in many respects, the rate of gain may diminish. Moreover, the experience of Great Britain and France with industrial policies and nationalization of industries has not been successful. In fact, these countries are now in the

process of denationalization and privatizing many of their state-owned-and-operated enterprises.

Problems of a Formal Industrial Policy

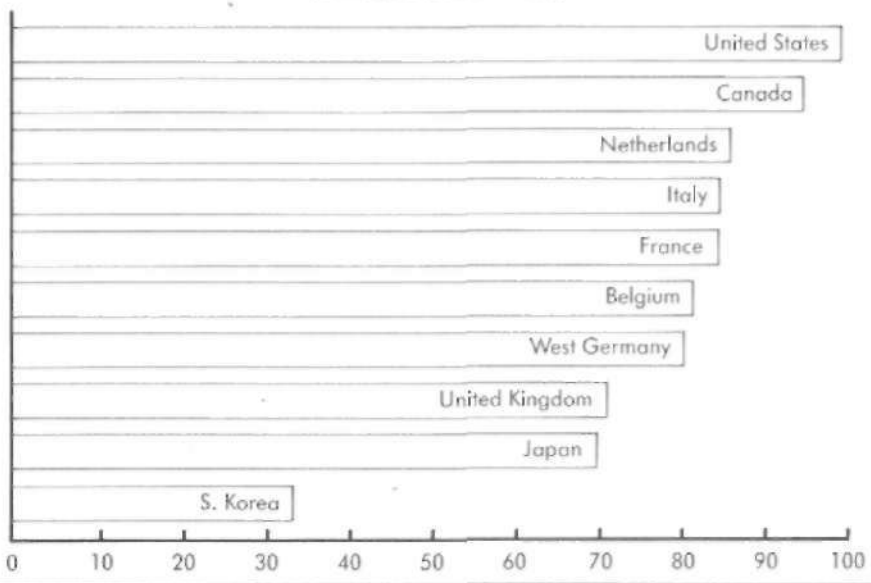
Any formal industrial policy involves the process of picking winners and losers. Who will select the industries targeted for aid or oblivion? What type of aid will it be? On what basis will the selections be made? These are but a few of the questions.

Of course, there are difficulties in adopting such a policy in the United States, including (1) the independence of not only the commercial banks but the Federal Reserve itself, (2) the presence of strong antitrust laws, (3) the adversary character of U.S. labor unions, and (4) the general separation of the U.S. economic system from the nation's political structure. Many Americans are also concerned that the adoption of such a major plan or policy would probably erode many economic freedoms cherished by business firms, banks, labor unions, and individuals.

There is also some disagreement about whether a productivity problem exists. Although several nations are experiencing faster productivity growth, the United States is still ahead of all other nations in terms of total productivity per labor hour. Figure 3-11 shows gross domestic product (GDP) per employee

FIGURE 3-11

International Productivity Levels
(United States = 100)



SOURCE: *Productivity Perspectives* (1989).

for several nations compared to the United States, as measured by the Bureau of Labor Statistics. In spite of its high productivity growth rate, Japan is low on the scale because Japanese workers work substantially longer hours than do workers in the United States and some other nations.

But the major question remains: Should the U.S. have a formal industrial policy? The arguments pro and con abound. Among economists there is no lack of support for either side. Some economists, such as Robert B. Reich of Harvard, Lester G. Thurow of MIT, and government consultant Pierre A. Rinfret have spoken in favor of an industrial policy. On the other hand, Charles L. Schultze, Murray L. Weidenbaum, Alan Greenspan, and Herbert Stein, all former Chairmen of the President's Council of Economic Advisers, have spoken out against adopting a formal industrial policy.

CONCLUSION

After leading the world in technology, productivity, and economic growth, the United States experienced a noticeable decline in the rate of productivity growth during the 1970s and early 1980s. Total production and per capita income are determined by productivity growth and growth in labor hours. Productivity growth accounts for approximately 80 percent of the growth in our real GNP. Among other factors, productivity is affected by investment, business cycles, the capital-to-labor ratio, and the amount of research and development taking place in the economy.

The slowdown in productivity in the U.S. economy has been attributed to an inadequacy of investment, the use of antiquated capital facilities and equipment, the changing composition of the labor force, the impact of economic regulation, the slowdown in spending for research and development, management inefficiency, and worker lethargy. The U.S., for example, devotes a smaller share of its GNP to investment than do most other major industrial nations.

Among the suggestions for improving the nation's productivity and economic rate of growth are the following: (1) a more favorable tax policy to stimulate investment, (2) an increase in rate of savings, (3) a reduction of the restrictions caused by economic regulation, (4) a modification of the nation's social goals, (5) improved managerial efficiency, (6) increased spending on research and development, (7) more worker involvement in the productive process, and (8) closer cooperation between management and labor. Some Americans have also suggested that the country should adopt a formal indus-

trial policy similar to that of Japan as a means of restoring productivity and world competitiveness to the U.S. economy.

There is no question that the decline in the rate of growth in productivity in the United States created or aggravated some major economic problems. How the country should go about improving productivity and whether or not it should adopt an industrial policy remain open questions.

QUESTIONS FOR DISCUSSION

1. Do you think that investment generates economic growth or that increases in GNP induce investment?
2. Should the Congress enact an industrial policy bill?
3. Do you favor the use of direct government aid, such as the Chrysler loan guarantee of 1980, to assist U.S. business?
4. Do you think the U.S. should modify its national environmental requirements in order to improve productivity?
5. Should the U.S. restrict foreign imports to aid American businesses?
6. Do you agree with corporate and union leaders in the auto industry that Congress should enact a domestic contents law for automobiles sold in this country?
7. Do you believe that the double tax on corporate profits (tax on profits and dividends) should be eliminated?
8. To what extent do you think that the U.S. decline in productivity is due to managerial inefficiency or to worker lethargy?
9. Should the U.S. adopt a national "Buy American" program to fight off imports?
10. Should the U.S. steel industry be given protection against lower-cost imported steel?

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4

AGRICULTURE
IS THE CRISIS OVER?

For the past sixty years or more the United States has grappled with a farm problem. The problem has assumed many forms. For a few years in the early 1970s beef and crop shortages, accompanied by strong domestic and foreign demand, caused a dramatic rise in farm prices and farm incomes. At that time the farm problem, to many people, appeared to be one of shortages and scarcities. In 1974 and 1975, however, the reappearance of surpluses and resumed decline in farm prices and incomes suggested that the American farm problem was reverting to what it had been—one of abundance. In fact, in 1977 groups of farmers were demonstrating throughout the country and in Washington, D.C., using tractor parades to protest low crop prices and high operating and living costs. In the mid-1980s the severity of the farm problem reached its most dramatic level since the Great Depression, 50 years ago, culminating in a rash of farm bankruptcies and widespread country bank failures.

Some recovery from this problem took place between 1986 and mid-1988; then the farm sector was plagued with severe drought in 1988. By

mid-1989 farmers were recovering from these short-range problems, but the long-range problem remained.

The long-range problem of excess supply, low prices, and inadequate farm income has been attacked with a variety of remedies and has been the cause of almost continual controversy over the past several decades at the highest levels of government. But still it remains largely unsolved. Just what is this problem? Is it so complex that it defies clear identification and solution?

THE LONG-RANGE PROBLEM

For decades, many authorities have stated that the American farm problem is essentially one of abundance. Their position holds American agriculture to be so productive that it is capable of supplying the needs of a population vastly larger than the current one.

If one accepts this view of the farm problem, then its cause is primarily in the economics of the situation. The rapid increase in agricultural productivity simply outstripped the economy's ability to consume farm output. Years ago it was suggested that rising population, new industrial uses, and broadening foreign markets would eventually bring the demand for farm products into balance with supply. Farm prices would then stabilize at some satisfactory level, the government could withdraw its support, and the problem would solve itself, provided farm productivity ceased growing so rapidly. This did not occur, however.

The continual growth in agricultural output, far in excess of current needs, maintained a constant downward pressure on relative farm prices and on farm incomes. While farm incomes remained low relative to the incomes earned in other sectors of the economy, the prices paid by farmers for goods and services to meet their production and consumption needs continued to rise. In the face of this problem, the federal government intervened in the market for farm products in an effort to raise farm incomes to a level that would enable the agricultural sector to remain a viable part of the American economy.

Subsidies to Agriculture

One aspect of the farm problem that disturbs many Americans is the use of their tax dollars to support a particular segment (and a diminishing segment at that) of the national economy. Paying out tax dollars to farmers for not producing seems contrary to American values that have traditionally dictated rewards for the producer and penalties for the laggard. To many, the solution to our farm problem is obvious: Congress need only to cancel all programs designed to raise farm incomes. Market forces would then dictate farm prices, and only the most efficient producers would manage to survive the shifts in supply and demand caused by changes in climatic conditions, consumer tastes,

the rate of population increase, and the demand of industry for raw materials. Farm efficiency would continue to rise as farmers sought to lower their costs of production and thus gain larger profits. But this solution too has a flaw. What of the farmers who could not compete in the free market, for whatever reason? What would become of them?

They would remain a part of the economy; but they would somehow have to be assimilated into other sectors, and this assimilation would be a difficult and time-consuming process. In 1988 the farm population comprised about 5 million people, or about 2.0 percent of the nation's total population. It has been estimated that America could meet its present and foreseeable needs for farm products with a farm population roughly two-thirds that size. If the nearly 2 million people now living on marginal farms[1] were suddenly displaced and forced to relocate in urban areas, the burden of this nonproductive group would be difficult for urban economies to bear. Massive financial aid would be necessary to sustain these people until they equipped themselves to compete in an urban industrial society. There would also be a hardship on the displaced farmers and their families. Uprooted from the only way of life many of them have known, they would undoubtedly be sorely pressed to conform to urban standards and values. It is easy to foresee antagonisms developing between the original urban dwellers and the newcomers. It is not necessary to dwell on the consequence of such a move, however, save to state that it would be serious for urban society.

Social Aspects of the Farm Problem

Considering the consequences of final and complete removal of government agricultural subsidies forces one to come face-to-face with the essence of the farm problem. The trouble resides not only in the economics of the farm industry, but also in the social problems that arise therefrom. The American people have long praised the efficacy of a free enterprise economy, but they have never hesitated to interfere with the workings of such an economy when it began to exact social costs detrimental to the welfare of certain groups of citizens. They recognize that competitive pressures placed American farmers in a situation that they can not face unaided. If Americans were willing to accept the displacement of marginal farmers because they could no longer compete with their more efficient counterparts, and if this country was willing

1. *Marginal farmers* are defined as farm owners or operators (tenants) who would be unable to support themselves and their families in the absence of government crop-support payments or other aids to supplement their income. The causes of their marginal position can be many and varied. The essential characteristic, however, remains their inability to survive, as farmers, in the absence of government intervention in the market of agricultural products.

to accept that a considerable number of these people would be forced to exist in substandard conditions, then the solution to the farm problem would be easier. The humanistic values of the American people, however, are strong enough to prevent such a social calamity. Americans live with a so-called "farm problem" as a result of their efforts to solve a social problem of much wider dimensions.

A Paradox

There have been and are many farm problems and several ramifications to each one. The farm problem in the United States, except for the shortages that occurred in the mid-1970s and occasional droughts, is different from the problems in many other parts of the world.

The Real Problem. Since the dawn of recorded history, the human race has struggled with a much more realistic and serious farm problem. A majority of the world's population still faces this problem—not enough food. Historically, famine has been coupled with disease and war as the most terrible ravagers of the human race. Outright starvation has taken a heavy toll, but far more insidious have been the effects of inadequate diets. The life expectancies of people in countries with sufficient food of the proper types inevitably are higher than those of peoples existing in countries where marginal food supplies are sufficient for mere subsistence alone. It is only recently, in the last 200 years, that some fortunate countries, including the United States, have managed to solve this problem.

The countries of North America and Western Europe have managed to provide diets for their people that have been well above subsistence levels. The application of scientific methods to farming, the development of more efficient farm implements, and the substitution of mechanical energy for animal energy in the heavier farm tasks all aided in the solution of the farm problem for these fortunate countries. It is now possible to produce, in a given year, a surplus of farm products to tide the country over in the event of a poor production year. No longer must the peoples of the agriculturally advanced countries live in constant fear of uncontrollable changes in the weather. In short, the peoples of these countries, particularly the United States, need no longer fear the ravages of starvation. For them the real farm problem has been solved. Herein lies the paradox.

The American Problem. As stated earlier in the chapter, the farm problem in the United States lies in the social costs caused by rapidly increasing agricultural productivity and the resulting abundance of farm products. To see the paradox in the situation, one need only consider this country's farm problem in light of the real farm problem faced by most other countries in the world. While much of the rest of the world does not have enough to eat,

Americans possess an embarrassment of agricultural riches because they refuse to subject a relatively small portion of the population to inordinate economic and social pressures. When viewed in this context, one begins to wonder whether the United States really has a farm problem.

In this context it is possible to consider the American farm problem somewhat more objectively. First, failure to solve the American farm problem will not mean starvation for the American people. Thus, a solution predicated over a period of years is practicable. Second, Americans are motivated to seek a solution to the problem not because economic inefficiency or insufficient resources forces them to do so, but because they share a common concern for human dignity and values. Americans want marginal farmers to assume their productive place in society. To gain a better understanding of the complexities of the American farm problem, it is necessary to turn to a consideration of its historical evolution.

HISTORICAL DEVELOPMENT OF FARM PROBLEMS IN THE UNITED STATES

It is easy to forget that, for more than the first 100 years of this country's existence, agriculture was the most important sector in the total economy. In fact, as late as 1910 the majority of Americans still resided in *rural areas* (defined by the Census Bureau as including places with populations of less than 2,500). Although 25 percent of the U.S. population still live there, only a limited number actually live on farms or directly depend on agriculture for their livelihood.

Early Importance of Agriculture

The root cause of the farm problem can be traced to the dominance of agriculture during the developmental years of our country. The vastly rich, undeveloped areas of the United States invited settlement and cultivation during the nineteenth century. The federal government, through a series of public land acts, made available to its rapidly growing population immense tracts of fertile land on a free or nominal-cost basis. The great westward shift in population began in earnest in the years immediately after the Civil War, and by 1910 distinct areas of the country were specializing in the production of crops best suited to their soils and climate. The middle section of the country comprised three broad belts, with the northern and southern belts raising spring and winter wheat and the middle belt specializing in corn and hog production. To the west, the vast grasslands of the Great Plains encouraged beef-cattle operations on a unprecedented scale. As cotton production shifted westward,

so that by 1900 Texas was the largest cotton producer, tobacco became the major crop of the deep South.

The net result of the shifting of crop and livestock production to areas best suited to their requirements was a vast increase in farm output, although this factor does not explain the increase entirely. Not only were lands, climates, and crops better matched, but the amount of land under cultivation vastly increased. In short, the major cause of increasing farm output during the latter years of the nineteenth century and early years of the twentieth was that more land was being cultivated. The increase in output occurred not so much because the land was being cultivated more intensively, but rather because more and better land was being cultivated.

Rising Level of Agricultural Technology

Throughout the nineteenth and early twentieth centuries, the development of improved farm machinery played a major role in increasing agricultural output. Threshing machines, steel plows, seed drills, mowers, rakes, cultivators, and reapers significantly increased farmers' efficiency. With these machines farmers could cultivate much larger acreages than was possible with the primitive hand tools that had historically been available. Mechanization of the American farm was widespread by 1915, by which time the development of the gasoline engine had solved the age-old problem of the limitations imposed by animal power. Some of the steam-operated farm machines of the late nineteenth century had become so large that 40 horses were necessary to move them. The advent of the gasoline-powered farm tractor in the early years of the twentieth century cut the last bond that tied farmers to the relatively puny resources of animal power, and the farmer's capability literally soared.

A somewhat different form of improvement in agricultural technology has occurred in the period from World War I to the present. Prior to World War I, practically all of the increases in farm output could be ascribed to more extensive cultivation of the land. After the war, more intensive cultivation made possible by advances in science began to contribute to the increase in output per acre. Advances in the understanding of soil chemistry, combined with the development of improved strains of crops and livestock, highly efficient fertilizers, and pesticides enabled farmers to raise per-acre output to unprecedented levels. Scientific farming, a general term used to describe the application of the latest mechanical, scientific, and methodological improvements to farm operations, became a popular term, and the Department of Agriculture became very active in disseminating the latest of these developments to every portion of the national farm community. The Department has maintained its efforts to increase farm productivity through the years. In addition, the agricultural colleges in various states have played a significant role by conducting the basic research that has been necessary to raise farm productivity.

Increasing Productivity

The rise in real farm output during the past 100 years has been phenomenal. And the trend continues. The index of farm output compiled by the Department of Agriculture indicates that real output increased 30 percent in the period 1970–1987. But even more important for our purposes, farm output per worker-hour during that period increased 128 percent and the worker-hours of labor required on farms declined by 40 percent. The increase in the farmers' individual productivity, more intensive cultivation of the land, and minimal acreage reduction have been major elements in the creation of our farm problem. These trends continue today unabated, and unless they are kept constantly in mind, a meaningful analysis of the future of our agricultural community is improbable.

THE ECONOMIC ASPECTS OF THE FARM PROBLEM

A family farm is a producing unit, and the farmers who operate them have as their goal an income sufficient to cover all costs of production, plus a residual amount that will enable them to support their family in a reasonably comfortable manner. This is a basic fact that must be remembered when discussing the farm problem.

During the pioneering years of American agriculture, the family farm was almost self-sufficient. Located far from centers of manufacture and trade, and hampered by a still developing transportation system, American farmers were forced to rely on their own ingenuity for survival. With the construction of regional and national railroad networks and the building of a farm-to-market system of highways, their lot improved. Farmers could begin to specialize in the crops for which their land was best suited, and they could sell this output in ever-broadening national and international markets. The money income that they earned allowed them to purchase the goods of other specialists at prices much lower than the value of the time they would have to spend to produce similar goods. Thus, American farmers entered the market economy and began to face the rigors of competition.

The Market for Farm Products

The farm economy has always been a prime example of a freely competitive market. The producers of farm products fit well the assumptions of pure competition in that price and output decisions in the market have never been dominated by one or a small group of producers. American agriculture historically has been characterized by the relative insignificance of the output of a single farm when compared to the aggregate output of all farms. In addition, farm products, by their nature, are homogeneous so that it is very difficult to

distinguish the corn produced on Farm *A* from that produced on Farm *B*. As a consequence, it is practically impossible for any farmer to gain any substantial degree of pricing power. Thus, both the larger number of relatively small producers of farm products and the homogeneity of the products themselves tend to discourage the development of monopolies in agriculture. The wide dispersal of farm ownership likewise largely precludes the possibility of one or a few farmers controlling the amount of farm goods produced in a given year.

Price Determination

The inability of farmers to control prices for farm products has been one of the most important economic aspects of the farm problem. Because individual farmers are powerless to set prices for their products, they must be considered price-takers, that is, they can sell their products only at the going price. If they choose to charge more than the going price, they can sell little or nothing of their crops. If they charge less than this price, they are acting irrationally because the market is willing to take all of their output at a higher price. But if farmers are price-takers, who is the price-maker?

The answer to this question lies in a basic economic principle, specifically, the interaction of the forces of supply and demand to form a market price. Given a schedule of the units of a good that sellers will sell at various prices, and a similar schedule of what buyers will purchase at various prices, it is possible to determine what the market price will be. Table 4-1 illustrates such a schedule. It is apparent from this table that the market for commodity *X* will

TABLE 4-1

Schedule of Supply and Demand for Commodity X

Price	Number of Units Sellers Will Sell	Number of Units Buyers Will Buy
$10.00	10	0
9.00	9	1
8.00	8	2
7.00	7	3
6.00	6	4
5.00	5	5
4.00	4	6
3.00	3	7
2.00	2	8
1.00	1	9

be cleared—that is, sold completely—at a price of $5. Five units of the good will be offered for sale at this price, and all five units will be taken off the market. In this way, the forces of supply and demand determine both market price and also the number of units that changes hands.

This simple model, however, does not tell us why buyers and sellers will exchange five units at a price of $5 each, nor over what period of time this exchange will take place. To answer these questions, one must examine more closely the nature of the supply and demand schedules.

Demand Inelasticity. Price elasticity is a measure of consumer and supplier response to a change in price. The demand for most farm products is price inelastic, that is, a buyer's desire for the good is not significantly affected by changes in its price. The supply of farm products is also relatively price inelastic.

Probably the most significant limitation facing the American farm is the size of the human stomach. The consumer can eat just so much food within a given time. Whether the price of the food is high or low, it will not significantly affect the amount consumed. The same limitation is true of other farm products that cannot be classified as edibles. Thus, wool and cotton are limited by the population's ability to wear out its clothing, and tobacco growers can hope to sell no more of their output than smokers can possibly smoke. The producers of hides are constrained in the amount of leather they can supply by the ability of people to wear out shoes and other leather goods. In other words, the demand for farm products is relatively stable over long periods of time and is largely determined by population growth and consumption patterns rather than price levels.

Demand inelasticity, however, applies only to farm products in the aggregate, not to individual products. It is entirely possible, for example, that falling meat and dairy prices could cause people to shift their demand away from cheaper products, such as bread and potatoes, to these more expensive high-protein foods.

Rising incomes can have a similar effect. The overall demand for farm products is income inelastic as well as price inelastic. Higher incomes will not cause people to consume proportionally more food, but the extra money will probably cause them to purchase more of the higher-priced foods, such as meat and dairy products, and less of the cheaper products.

Supply. If the demand for farm products is stable over long periods of time, then what of supply? Have American farmers been able to regulate their output so that it just meets the stable but growing demand and thus balances farm prices and maintains incomes at some normal level? Unfortunately, no. The variables that determine the level of crop and livestock production are too numerous and unpredictable to submit to the control of humans. Rainfall, days of sunshine, mean temperature, insects, plant diseases, floods, blizzards, hail, and drought all combine to make farming an unpredictable business at best.

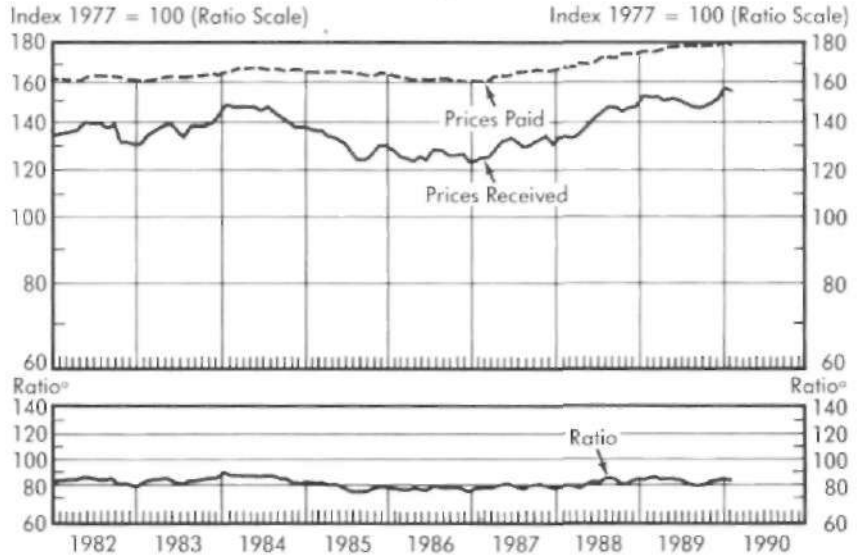
Even today, after years of intensive research directed toward controlling at least some of these factors, the average farmer can still lose an entire crop because of the vicissitudes of nature. About the only variables that the farmer can regulate are the number of acres planted, heads of livestock raised, and the amount of growth that can be induced through the application of labor and scientific farming methods.

The Parity Ratio

The best indicator of a situation where demand is relatively stable and predictable, and supply is highly variable is the movement of farm prices. Figure 4-1 shows the movement of farm prices for the years 1980–1989, along with an index of the prices paid by farmers plotted together with a parity ratio. The parity ratio measures changes in the purchasing power of farmers as prices rise and fall. A rise in the parity ratio above 100 means that the index of prices received by farmers (the numerator) is rising faster than the index of prices

FIGURE 4-1

Prices Received and Paid by Farmers



Ratio of index of prices received to index of prices paid, interest, taxes, and wage rates, on 1910–1914 = 100 base.

SOURCE: *Economic Report of the President* (1990).

they pay (the denominator). In other words, they are enjoying a relative increase in purchasing power. A drop in the parity ratio indicates that their purchasing power is decreasing.

An examination of parity ratios gives a fairly clear indication of the plight of American farmers for the 60 years prior to 1987. In only 17 years (1916–1920, 1941–1952, and 1978–1979) did the parity ratio stand in favor of the farmers. During much of the 1980s it moved downward.

The record traces a rather dismal picture of the financial plight of farmers, but it also provides an insight into the nature of the supply of farm products. It indicates that the producers of goods and services sold to farmers—manufacturers, retailers, bankers, and other professionals—were better able to match their supply of goods and services to shifting demand, so that the prices they could charge did not vary as much as the prices of farm products. Unfortunately, individual farmers did not enjoy a similar degree of control over the supply of farm products. Given favorable growing conditions, the farm community would produce a bountiful crop. In the face of stable demand, this increase in supply would cause a fall in farm prices. Farmers, witnessing a drop in income caused by falling prices, could react to falling prices only by planting more acreage or by raising more livestock the next year to counteract the corresponding decline in income. But increasing farm output lowers prices and income further.

The two ways out of the vicious circle have been (1) declines in farm output caused by adverse growing conditions, such as the drought in 1988, or (2) artificial increases in demand, such as happens during war. Favorable parity years coincide almost exactly with the years of World Wars I and II and a brief period in the 1970s.

The only other solution, voluntary control of supply by the farm community, has never been successfully implemented. There have been many attempts at voluntary control of farm output, but most have been ineffective, largely because of the independent nature of American farmers. They have simply refused to accept that by increasing their output they may well be acting to their own detriment.

Economic Effects of Rising Farm Productivity

The technological development that has taken place in American agriculture has greatly enhanced the ability of farmers to increase output in an effort to offset falling income. Figure 4-2 traces the results of this development for the years 1929 through 1987 as it has affected farm employment and the productivity of farm workers. The effects of soaring farm labor productivity are evident. As farmers have added successive increments of capital equipment and fertilizers, the need for farm labor has declined, as has the farm labor force. In the period between 1929 and 1987, the farm labor force decreased by more than two-thirds from 12.8 million to less than 3.0 million. The significant fact

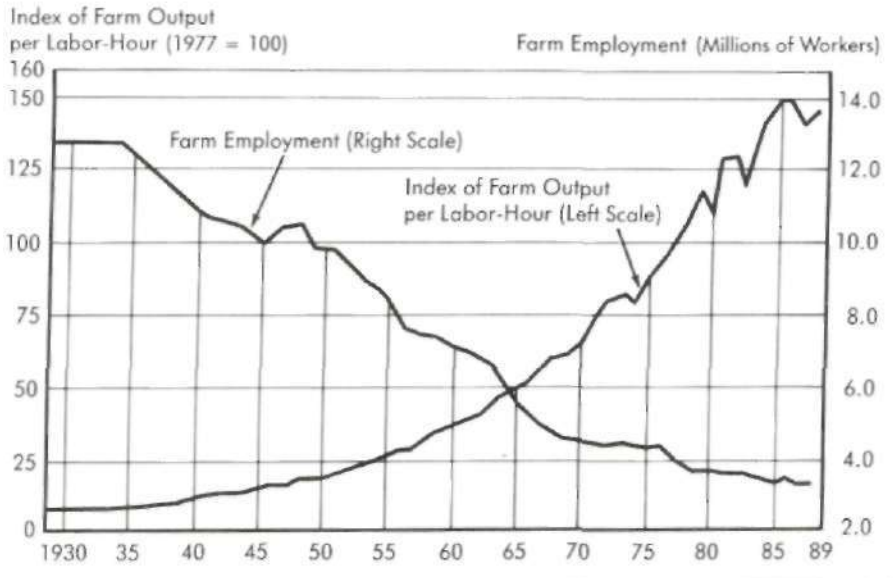
about this decline is that it occurred in the face of a more than doubling farm output. Over the same period, 1929 through 1987, the volume of total farm production (1977 = 100) rose from 44 to 110.

The revolution in agricultural technology also had a direct effect on the size of the average American farm. As equipment became larger and more specialized, as well as more efficient, it was feasible to use it only on larger acreage. The days when the general-purpose farm of 100 or so acres can support a farm family are fast fading. Table 4-2 shows clearly the accelerating trend toward larger farms in the United States. This trend parallels the surge in farm labor productivity that is traced in Figure 4-2. Preliminary data show that by 1988 the total number of farms had decreased to 2,159,000.

As the average size of the American farm increases, handling it efficiently takes fewer and fewer workers. As available farm jobs decline, agricultural workers must find other types of employment or face, at best, a marginal existence on less than marginal farms. As stated earlier in this chapter, agricultural experts estimate that the American agricultural sector could meet the country's present and foreseeable needs with a farm population roughly

FIGURE 4-2

Farm Employment and Worker Productivity, 1929–1987



SOURCE: *Statistical Abstract of the United States* (1989) and *Economic Report of the President* (1978, 1986, and 1990).

TABLE 4-2

Number of Farms, Classified by Acreage
1959–1982
(In thousands)

Size of Farm	1959	1969	1974	1978	1982
Total	3,711	2,730	2,314	2,258	2,241
Under 10 acres	244	162	128	151	188
10 to 49 acres	813	473	380	392	449
50 to 99 acres	658	460	385	356	344
100 to 179 acres	773	542	443	403	368
180 to 259 acres	414	307	253	234	211
260 to 499 acres	472	419	363	348	315
500 to 999 acres	200	216	207	213	204
1,000 to 1,999 acres	70	91	93	98	97
2,000 acres over	57	60	62	63	65

SOURCE: *Statistical Abstract of the United States* (1989).

two-thirds its present size. If these estimates are correct, then it follows that the remaining one-third of the American farm population is existing on marginal farms. If so, what sustains these people? If their farms are not efficient enough to compete with large, capital-intensive farming operations, how, in the absence of nonfarm income, do they manage to survive?

COMMODITY PRICE SUPPORTS AND THE CONCEPT OF PARITY

During this century American farmers witnessed a variety of changes in farm production, employment, and especially income.

The Golden Age

The first two decades of the twentieth century were the golden age for the American farmer. Markets grew apace of industrial production, the work force increased rapidly, and, on the farms, prices and incomes continued to rise. When war broke out in 1914, the production of agricultural commodities virtually ceased in Europe, and in response the American farm sector rapidly became the "breadbasket" for the entire Allied forces.

Farm prices rose sharply and farm output jumped almost 20 percent in the period 1916–1918. Additional acreage was pressed into production to meet the surging demand, much of it originating in Europe. With the end of

As European farms began to return to production, markets became saturated, prices dropped, and farm income fell rapidly under the stimulus of the greatly enlarged farm output flowing from war-enhanced farm capacity. By 1920 the plight of American farmers had become serious enough to attract government attention.

Farm Legislation of the Twenties

In 1920 and 1921 President Harding signed into law legislation that raised tariffs on agricultural commodities imported into this country. The law worked well with respect to commodities such as wool and sugar, where foreign producers were an important element in the market. Unfortunately, the law ignored the fact that the United States was almost completely self-sufficient in agriculture. The producers of cotton, tobacco, feed grains, and pork received virtually no help from the tariff because imports of these commodities were limited to begin with.

The 1920s were good times for most Americans. Industries prospered and the age of mass production and mass consumption arrived. Unfortunately, the farmer did not participate in this prosperity. While the cost-price relationship (parity) of farm products was not excessively out of balance, a new factor had been injected. During the war years, many farmers had borrowed heavily to finance the cultivation of new acreage, or to bid away available acreage from their counterparts. The high level of farm incomes had been capitalized in the form of farm land values that rose to record heights. With the arrival of depressed farm prices and incomes in the 1920s, the fixed interest and principal payments on loans contracted during the war became excessively burdensome. As a consequence, farm foreclosures became common, particularly in the Middle West, where many small banks were forced into bankruptcy because of the decline in value of their prime assets, mortgages on farm lands.

The Great Agricultural Depression

By 1929 the decline in agricultural income had become serious enough to prompt the Hoover Administration to attempt corrective measures. The Agricultural Marketing Act of 1929 created the Federal Farm Board, with power to support attempts by farmers' cooperative marketing associations to stabilize prices. The board promptly entered the market for cotton and wheat, attempting to support their prices at 16 cents a pound for the former and $1.15 a bushel for the latter.

By the summer of 1931 the domestic price of cotton had fallen to 6 cents a pound and that of wheat to 39 cents a bushel, and the board held some 3.5 million bales of cotton and 257 million bushels of wheat. This failure of the program could have been predicted. In theory, it is possible to subsidize domestic farm prices through purchase and storage if sufficient funds are

available and if periods of surplus are followed by periods of shortage; but the Federal Farm Board had limited funds, and farm output was perennially in surplus. Another feasible solution would have been the introduction of acreage production controls. The board, however, had no choice but to plead for voluntary reductions in farm output. Farmers largely ignored its plea, and the program failed.

Parity. With the election of the Roosevelt Administration in 1932, the philosophy of government support payments to augment agricultural income formally became national policy. Stripped of all embellishment, this policy was simply "economic equality for agriculture." The Administration was committed to the idea that the purchasing power of farm income was to be the criterion for judging the adequacy of farm policies. The concept of parity was introduced as a standard of the relative well-being of the farm sector. In the Agricultural Act of 1933, the first New Deal farm legislation redefined support to mean parity; that is, farm prices were to be established and supported at a level that would give farmers an income from agricultural commodities that would result in purchasing power comparable to that of a base period, August 1909 to July 1914. This base period, of course, had occurred in the middle of the golden age of American agriculture, when economic conditions were very different.

Parity is perhaps best understood by means of a simple example. Table 4-3 lists the prices of a bushel of wheat (price received) and a shirt (price paid) for the base period (1909–1914) and an assumed year (1935). Indexes of the prices paid and received by farmers are calculated with the base period equal to 100. A parity ratio is computed by dividing the index of prices received by the index of prices paid. The resulting parity ratio of .43 shows that while the

TABLE 4-3

Computation of Parity Price

	Good Sold		Good Purchased	
	1909–1914	1935	1909–1914	1935
Wheat, 1 bu.	$1.50	$0.40	Shirt $2.00	$1.25
Price Index	100	27	100	63
Index of Prices Rec'd	=	27	= .43 = Parity Ratio	
Index of Prices Paid	=	63		
1935 Price of Wheat	=	$0.40	= $0.93 Per Bushel of Wheat, Parity Price	
Parity Ratio	=	.43		

prices of both goods have fallen, the price of a bushel of wheat had declined much further. That is, the bushel of wheat commanded less than half as much purchasing power, relative to the shirt, as it did in the base period. In the 1909–1914 period the sale of 1.33 bushels of wheat ($2.00/$1.50) would have yielded the farmer sufficient income to buy the shirt. In 1935 the farmer had to sell 3.12 bushels of wheat ($1.25/$.40) to purchase the shirt.

To maintain equality of purchasing power for the farmer, the actual price of wheat in 1935, $.40 per bushel, must be adjusted upward by dividing it by the parity ratio. Thus, wheat must be supported at $.93 per bushel, a price that would still allow the farmer to sell 1.33 bushels ($1.25/$.93) and use the proceeds to purchase the shirt.

With the introduction of the parity concept, the farm problem took on explicit social dimensions that had previously been only implicit. The federal government committed itself to the philosophy that the farm population should not be subject to an economic situation that placed it in a significantly inequitable position regarding income and purchasing power relative to the rest of the population.

Agricultural Adjustment Act of 1933. The mechanisms for preserving this equity have changed in detail over the years, but they have all been ordered to the same end and have employed essentially the same means. The Agricultural Adjustment Act of 1933 established the Commodity Credit Corporation (CCC), which, like the earlier Federal Farm Board, was authorized to extend loans and both to purchase and store agricultural commodities. The loans were of the nonrecourse (nonobligatory) type and stipulated that if the value of crops held as collateral went above the CCC loan, the farmer could repossess the crop, sell it, pay off the loan, and pocket the difference. If prices fell below the loan-support price, the farmer would be permitted to default on the loan payment, keep the money loaned, and allow the government to take permanent possession of the crop that was serving as collateral.

The program differed from the 1929 Act in that it did provide for controlled production. The Secretary of Agriculture was empowered to enter into voluntary contracts with farmers to restrict crop acreage and livestock breeding to a specified percentage of a base period. Another provision of the 1933 Act permitted payments to be made in the form of rentals for acreage taken out of production. The funds to implement this program were to come from a tax on the processors of the supported commodities, such as meat packers, wheat millers, cotton ginners, and canners.

In January 1936 the Supreme Court held the Agricultural Adjustment Act of 1933 to be unconstitutional. The court ruled that the tax on processors favored the interests of a particular group (farmers) over those of the general public. The court stated further that the benefit payments financed by the tax were being used to purchase conformity (induce farmers to cooperate) with a program which Congress, under the Constitution, had no power to enact.

The Soil Conservation and Domestic Allotment Act of 1936 had as its purpose the conservation and improvement of soils. Direct federal payments were made for planting "soil-conserving" crops in place of "soil-depleting" crops. Since the crops that historically had been supported were defined as *soil depleters*, the result was another method of payment by the federal government for acreage reductions in the important cash crops.

Agricultural Adjustment Act of 1938. This new Agricultural Adjustment Act was essentially the same as the Act of 1933 with one significant difference. In the new act Congress specifically directed the Secretary of Agriculture to intervene with nonrecourse loans whenever the prices of basic commodities fell below defined levels, or supplies rose above certain levels. In addition, the loans were to be at rates between 52 and 75 percent of parity. Since that time, Congress has specified support prices at a certain percentage of parity prices.

World War II and After

During World War II, the tremendous increase in demand for American farm products depleted a substantial part of the nation's pre-World War II agricultural surplus. In 1945 the ratio of farm to nonfarm per-capita income, compared to the 1909–1914 base, stood at 151. Not until 1948 did world agricultural supply catch up with demand. When it did, American farmers quickly felt the consequences. Prices of farm commodities fell drastically, and farm organizations took up the cry for government supports.

Farm legislation passed in 1948 and 1949 showed little appreciable change from earlier legislation. The CCC became permanent and began to support operations in a manner substantially unchanged from its prewar practices.

Since 1948, there has been little basic change in the government's efforts to support farm incomes. Some new terms emerged, but none represented any real departure from earlier programs. "Flexible price supports," for example, are not new types of supports but, rather, limits within which supports can fluctuate depending on potential supply. The 1949 Agricultural Act redefined the base period on which parity was calculated. Instead of using the old 1909–1914 period, the act used a fairly recent period (Ten years according to this specific act).

In 1949 the Secretary of Agriculture introduced an innovative plan that would have replaced parity price supports with direct income payments to farmers. The plan was enacted by Congress. Under the plan, food prices to consumers would have been determined by the marketplace, and lower crop prices would have been offset by higher direct income payments to farmers.

In the 1950s Congress passed a soil-bank program similar to the soil conservation program of the 1930s. The program provided diversionary payments to farmers who shifted production acreage into a nonproducing soil bank

(idle land). The Agricultural Act of 1954 included flexible price supports, and the Secretary of Agriculture tried to shift farm policy toward a freer market. The Food for Peace program sought to reduce surplus crops through food-aid programs to other nations.

The Food and Agriculture Act of 1965, in an effort to regulate farm supply, removed many of the mandatory production controls and substituted voluntary acreage limitations, lower price supports, and higher direct payments to farmers. The Agricultural Acts of 1970 and 1973 liberalized output restrictions on both individual farms and certain crops in an effort to benefit family farms. The act also expanded the Federal Food Stamp program to give assistance to low-income families and help the sale of foodstuffs. By the mid-1980s, the program exceeded $12 billion annually.

The Agriculture and Consumer Protection Act of 1973 established the concept of *target prices* and deficiency payments. Participating farmers were to make production decisions on the basis of a target price, but unlike loan rates, the entire crop was to be sold on the market for what it would bring. The difference between the target price and the average market price (or the loan rate, whichever was higher) in the first five months of the marketing year was to be paid to the farmer in the form of a deficiency payment per unit of production. Using this plan, the government hoped to avoid accumulating stockpiles of agricultural goods unless the market price fell to the loan rate.

A major disadvantage of target pricing and deficiency payments is the potential large cost to the government when there is a wide difference between target price and the loan rate. To overcome this disadvantage the program required the farmer to reduce the amount of acreage planted.

The Food and Agriculture Act of 1977 established a three-year CCC loan program, known as the Farmer Owned Reserve (FOR). In exchange for a higher loan rate, a farmer who satisfies any acreage-reduction requirement can place commodities in the FOR for three years. After the first year, the loan interest is free. The Department of Agriculture pays for the storage during all the years of the loan. In return the farmer agrees not to sell grain until the market price rises to a specified release price.

The Agriculture and Food Act of 1981 continued the target price/deficiency payment program and the farmer-owned-reserve program. In addition, the act introduced the acreage reduction program (ARP). The ARP, similar to past programs, required participating farmers to limit a crop to only a portion of its previously established base acreage to qualify for benefits. The remainder of the base acreage was then to be devoted to conservation usage.

In response to continued large crop surpluses and accumulated government stockpiles, Congress passed the Payment-in-Kind Program (PIK) in 1983. PIK provided compensation (payments) to farmers in the form of commodities, from government storage, for diverting a specific amount of acreage into conserving uses. Participating farmers, in turn, could sell the crops on the open market if they desired.

Finally, at the end of 1985, Congress passed a five-year farm bill that took a stab at curbing the rise in outlays for farm subsidies, which by that time exceeded $16 billion annually. It provided for cuts in federal price supports for many farm programs in an effort to reduce the government's role in agriculture. As a result, early in 1986, the Secretary of Agriculture announced reduced price supports for crops along with further acreage cutbacks.

Tremendous stocks of surplus farm commodities continued to pile up throughout the 1950s and early 1960s in the face of government efforts to contract supply and, as a result, federal outlays to support farm prices continued to increase through the period. Table 4-4 gives an indication of the growth in value of price support inventories and loans between 1955 and 1987. This value represents CCC total holdings of loans and crops. Government investment in farm price supports grew rapidly in the mid-1950s and then leveled off around the $6 billion mark. There was a noticeable and substantial decline in surplus stocks in the latter half of the 1960s as a result of increased aid to foreign nations. In the early 1970s a dramatic decline in CCC holdings resulted from crop shortages in the U.S. and elsewhere throughout the world. There was, however, a substantial increase in CCC holdings in the early 1980s, with some decline in 1984 as a result of the PIK program.

PROBLEMS OF PRODUCTIVITY

What was the answer to this seeming enigma? What maintained the gigantic government stockpiles of farm commodities in the face of almost constant

TABLE 4-4

CCC Loans and Commodities Owned, 1955–1987
(In millions of dollars)

Year	Loans Outstanding	Commodities Owned	Wheat	Sorghum	Corn	Cotton
1955	$2,137	$4,572	$2,297	$133	$934	$266
1960	1,347	6,021	2,452	646	1,700	880
1965	2,534	3,892	1,297	648	595	1,123
1970	2,952	1,858	405	173	293	225
1975	335	416	2	Z	Z	Z
1980	5,119	2,737	705	93	596	1
1983	15,084	10,227	1,533	520	3,392	174
1984	8,571	7,358	1,510	290	1,045	74
1986	18,668	11,050	3,491	727	1,757	226
1987	15,174	11,735	3,272	2,830	4,172	24

Z = Less than $500,000.

SOURCE: *Statistical Abstract of the United States* (1970 and 1989).

efforts to contract supply by acreage allotments, soil banks, and land retirement? The answer to this question should, by now, be apparent. Rising farm productivity has been the source of the difficulty. Rising production per acre has more than offset the yield lost through land taken out of production.

Table 4-5 shows this trend for selected farm commodities and gives some idea of the dimension of the growth rate in output per acre. Such yield increases can only be explained by the tremendous advances in soil chemistry, insecticide chemistry, farm-machinery technology, and scientific farming practices such as crop rotation, contour plowing, and modern farm-management techniques. As late as the 1980s there was thought to be no end in sight to the rising trend in farm productivity. As government price support programs set smaller and smaller acreage allotments in an effort to bring supply into balance with demand, and as the modern farmer obtained more and more production from this shrinking acreage through the application of increasingly sophisticated materials, machinery, and techniques, something eventually had to give. Actually something had been giving all along.

As acreage bases shrunk, more and more marginal farmers found it impossible to support their families through farm work alone, even with price supports supplementing their incomes. Their acreage allotments had become too small to support efficient machinery, forcing them to turn to outside sources of income, primarily jobs in town, while residing on a farm. Table 4-6, for example, shows that more than half of the income of farm families comes from off-farm sources.

In increasing numbers many farmers sold their land to larger operators and moved to urban communities. As a result the corporation or commercial farm rapidly became the major source of farm output. This sort of farming operation is usually large enough and well-enough financed to take advantage of expensive, but highly efficient, innovations in farming methods. The question then arose whether it was proper, given the significant number of marginal

TABLE 4-5

Output per Acre Comparison for Selected Crops

Crop	1956–1960 Yield per Acre	1987 Yield per Acre	Percentage Increase
Wheat	23.4 bu.	37.6 bu.	61
Corn	51.2 bu.	119.4 bu.	133
Sorghums	32.4 bu.	69.9 bu.	116
Soybeans	23.2 bu.	33.7 lbs.	45
Tobacco	1,591.0 lbs.	2,026.0 lbs.	27
Cotton	434.0 lbs.	706.0 lbs.	63

SOURCE: *Statistical Abstract of the United States* (1978 and 1989).

TABLE 4-6

Net Income of Farm Operators from Farming
1980–1987 (In billions of dollars)

Year	Net Farm Income	Off-Farm Income
1980	$16.2	$37.7
1981	27.0	34.7
1982	23.5	36.3
1983	12.5	43.4
1984	32.3	39.0
1985	32.3	41.0
1986	37.9	NA
1987	43.5	NA
1988	42.6	NA
1989	53.0	NA

SOURCE: *Economic Report of the President* (1989) and *Economic Indicators* (January 1990).

farmers, to expect the government to subsidize them while paying the same levels of subsidy to large commercial farming operations that could very well operate without the support? This remained a dilemma facing the federal agricultural policymakers into the 1990s.

FARM PROBLEMS IN THE 1980s

The farm problem reached another critical stage in the 1980s. Encouraged by the inflationary environment of the 1970s, which saw farmland values rise at a compound annual rate of 12 percent, farmers' investment and production decisions were often made on the assumption that good times and inflation would continue.

Financial Stress

With the rapid growth in both earnings and equity (farmland values) outstripping inflation, farmers invested freely in machinery, equipment, and buildings, as well as in land improvements such as clearing, irrigation, and terracing. Under government sponsored programs, farmers converted substantial acreage previously used for pasture or conservation to grain and crop production as a way of capitalizing on booming export markets.

Lulled by the same feeling of optimism, farm lenders, including commercial banks, federal land banks, and government agencies were willing, and often eager, to finance farm expansion and production. As a result farm debt,

in spite of very high interest rates, grew rapidly in the 1970s and early 1980s, virtually matching the threefold increase in farm asset values.

Unfortunately for many farmers, the realities of the 1980s did not match the expectations of the 1970s. Widespread drought in 1980 and 1983 had a dampening effect on earnings. Export markets, instead of growing, shrunk. The heavy external debt of many foreign countries and the rising strength of the U.S. dollar made it costly for foreigners to buy U.S. food products. From its peak in 1981, farm exports dropped 28 percent by 1985. Likewise, growth in U.S. per capita meat production and consumption declined. Inflation, which had been at double-digit levels in the late 1970s and early 1980s, dropped to the rate of 4 percent or less beginning in 1982.

Farm income dropped. Net real cash income in the first half of the 1980s was down 22 percent from the 1970s, and net farm income fell in some years. By 1985 the value of farmland, which accounts for 75 percent of total farm assets, had declined by 33 percent from its 1980 peak. Total farm assets in the meantime had declined 20 percent. Farm debt, however, continued to rise in the 1980s.

Large loans, originally collateralized by high land values at high interest rates, left thousands and thousands of farmers in a bind as they struggled to service their debt (meet principal and interest payments) out of reduced earnings. Loan-payment deficiencies became widespread throughout the country, especially in the Midwest. With their asset values less than their debts, many farmers became insolvent and could not pay off their loans even by selling their farms.

A U.S. Department of Agriculture study released in 1985 indicated that 17 percent (370,000) of the nation's 2.2 million farm operators were financially vulnerable. Ten percent of the operators had serious financial problems (meaning that they could become insolvent in about four years), 3.3 percent had extreme financial problems and could become insolvent within two years, and 3.3 percent were already insolvent. The study indicated further that 25 percent of family-size operators fell into the financial vulnerability categories.

Under the circumstances many farm operators voluntarily either sold out or had their holdings liquidated in bankruptcy and foreclosure by their lenders. As a result, many farmers were forced off their land. In the Kansas City Federal Reserve district in 1985, for example, an estimated 6.7 percent of all farms and ranches were fully liquidated (2.5 times normal) and another 6.7 percent (six times normal) were partially liquidated.

Aggravating the farm problem were the depressed prices resulting from the record and near-record harvests of 1985. Planted acreage was very large despite farm programs aimed at reducing acreage as much as 30 percent in some cases. Carry-over stock and CCC holdings were still at high levels in spite of the two-year-old PIK program. Early in 1986, it was apparent that U.S. agriculture was facing another difficult year. Farm income declined further due to weak crop prices and sluggish exports. Land values too continued their

decline. Many farm lenders who had postponed foreclosures in previous years were themselves in poor financial condition. Therefore, farm liquidations, both full and partial, again ran well above normal in 1986.

Lender Problems

In addition to commercial banks there are other sources of farm credit. The largest percentage of farm loans come from the elaborate Farm Credit System (FCS). The FCS is composed of 12 Federal Land Banks (FLB) and more than 400 Federal Land Bank Associations (FLBA); 12 Federal Intermediate Credit Banks (FICB) and 370 Production Credit Associations (PCA); and a Bank for Cooperatives (BC). Once owned by the government, the banks are now wholly owned by the federally chartered affiliated FLBAs, which in turn are owned by the borrowers. FCS obtains capital through retained earnings, through the requirement that borrowers buy stock in the associations from which they borrow, and through the sale of bonds. Its bonds are sold to individuals, banks, insurance companies, pension funds, and others.

Government agencies such as the Farmers Home Administration (FmHA), the Commodity Credit Corporation (CCC), and the Small Business Administration (SBA) also provide financing for farmers. FmHA makes both real-estate and non-real-estate loans to farmers, CCC provides crop loans, and SBA provides business loans.

Other farm lenders include insurance companies and a category of lenders composed of "individuals and others." This last category includes merchants, savings and loan banks, and local credit organizations. Table 4-7 shows the percent of farm debt held by each of these leaders.

With farm debt exceeding $210 billion, farm lenders faced severe problems in the mid-1980s. In 1986, for example, the FCS was holding $74 billion in farm loans, and it was estimated that at least 15 percent were uncollectable.

TABLE 4-7

Distribution of Farm Debt by Lender, 1985

Lender	Percent of All Farm Debt ($213 billion)
Banks	23.4%
Farm credit system	31.9
Federal gov't agencies	17.3
Life insurance companies	5.8
Individuals/others	21.6
	100.0

SOURCE: *Economic Perspectives*, Federal Reserve Bank of Chicago (November–December 1985).

Consequently, some of the system's officials were seeking help through an infusion of capital from the U.S. Treasury. In addition to wide-spread farm bankruptcies, more than 100 U.S. banks failed, many of them country banks serving the farm community. The picture was no brighter in early 1987, with more delinquencies, foreclosures, and bank failures anticipated.

RECOMMENDATIONS

To alleviate current farm stress, various individuals, agencies, and organizations made numerous recommendations, among which are the following:

1. Moderate bankruptcy laws as they apply to the farmers so that the Federal government, through some type of transfer payment, would share with both creditor and debtor the financial loss of foreclosure.
2. Enact a debt-moratorium law similar to the one enacted in the 1930s. Such a law would restrict the use of foreclosure proceedings against farmers who could not meet their debt obligations.
3. Provide loan guarantees by federal or state agencies to protect lending institutions from default on the part of farm borrowers. Thus, in effect the Federal government would assume the debt obligation.
4. Restructure farm debt so as to stretch out, or write down, principal and interest payments in order to give the debtor more time to meet credit obligations.
5. Establish a program of asset leasebacks in which the creditor would take title to real property in lieu of farm debt repayment and then lease the property back to the original debtor. This, also, would keep the property off the foreclosure market, thereby reducing the pressures on declining land and other asset values.
6. Develop a program of debt-equity exchange to encourage farm debtors to seek outside equity from individuals, current debt holders, and equity institutions in exchange for debt. By this measure, creditors would become part owners of farms. In fact, a special bank, as exists in several Third-World countries, might be established by the government to give the farm sector an infusion of capital by purchasing equity in exchange for farm debt.[2]

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2. A good review of some of these and other recommendations is contained in the article "Policy Options for Agriculture," *Economic Perspectives*, Federal Reserve Bank of Chicago (November–December 1985). The article was written by Michael D. Boehje, Assistant Dean of the College of Agriculture at Iowa State University.

7. Form a government-financed agency to absorb farm assets—loans, land, and farm machinery—out of farm lenders' portfolios.
8. Increase price and income supports for farmers.
9. Provide direct infusion of government funds or rely on the Federal Reserve as a lender of last resort.
10. Establish an insurance fund, similar to the Federal Deposit Insurance Corporation, for the Farm Credit System.
11. Weaken the foreign exchange value of the U.S. dollar to encourage exports.
12. Lower U.S. interest rates to lessen farm loan repayment pressures.

1985 LEGISLATION

In the 1980s, debates on overall farm policy and a solution to the current crisis were widespread among farmers, bankers, government officials, and members of Congress. Among their general long-range recommendations for farm policy were the following: (1) the government should extradite itself from agriculture and let the free market attempt to solve the long-term farm problem; (2) the government should continue its current and past measures of price supports, acreage allotments, crop loans, and other financial support to farmers; (3) the government should move gradually toward the establishment of free markets in agriculture, setting target dates to reach certain levels of reduced government intervention.

Finally, in December of 1985, Congress passed a five-year farm bill following the third suggestion. The bill attempts to maintain farm income while allowing market forces to influence farmers' decisions to a greater extent. Among its more important provisions are the following:

1. Reduction of crop-loan rates nearer to world market prices in order to make U.S. farm products more competitive internationally.
2. Freezing of target prices for two years followed by a decline in target prices thereafter.
3. Expansion of exports through the use of export-credit guarantees over the next several years and the extension of the Food for Peace program to help the needy abroad.
4. Establishment of a long-term conservation reserve to idle as many as 45 million acres of marginal land.

The legislation assumes that the FmHA loan programs will remain a key source of credit to financially stressed farmers and made $4 billion available for its programs in 1986. The act proposed further legislation be enacted to grant help to the FCS through the establishment of a back-up line of credit with the U.S. Treasury.

There is not much that is new in the 1985 legislation. Crop loans have been lowered before and target prices have been adjusted. Export expansion

over the years has been encouraged. Exports, of course, will depend on the economic status of foreign nations and the foreign exchange value of the U.S. dollar, as both affect foreign buying power. The Food for Peace program is a few decades old and the Conservation Reserve idea is reminiscent of past programs, especially the Soil Bank of the 1950s.

CONCLUSION

Provisions of the 1985 farm legislation are likely to cost the federal government $52 billion during 1986–1988 and keep it very much involved in agriculture. By the end of 1987, however, the cost of the first year had exceeded $48 billion and was expected to exceed $70 billion for the three-year period. In addition, the Farm Disaster Assistance Act of 1987 called for more spending to provide limited assistance for specific problems in the farm sector.

By 1988, as farmers were recovering from the most severe crisis since the Great Depression of the 1930s, they were hit by severe drought. The drought ended in 1989, but the long-run farm problem remains. Although the number of farmers and the total acreage farmed have been decreasing over the past several decades, the United States still devotes more resources to farming than its markets warrant.

Regardless of the direction farm policy takes in the coming years, the voice of the farmers will still be heard, perhaps in a rising crescendo. Despite their shrinking numbers, farmers are still a significant economic and political force. They are the prime producers of those goods that Americans need most to sustain life. American farmers and their problems will not be ignored in the future any more than they have been ignored in the past.

QUESTIONS FOR DISCUSSION

1. Are the social implications of the American farm problem more serious than its economic implications?
2. Is it possible to reconcile the American ideals of free enterprise and individual dignity with federal support programs as they have evolved over the years?

3. Do you think that the U.S. should move toward large-scale commercial farming agribusiness and away from family farming?
4. Does the concept of parity seem workable in farm price-support programs?
5. Should there be a ceiling on government subsidies that can be paid to individual farmers or farm corporations?
6. Does there appear to be a conflict between the welfare of consumers and the desire of the government to improve the income of farmers?
7. Do you think the U.S. should concern itself with farm bankruptcies any more than it does with other business bankruptcies?
8. Does greater or lesser federal involvement in agriculture seem more likely to you at this time?
9. Do you think the most recent farm bill (1985) was a step in the right direction? Why?

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5

BANKING DEREGULATION
WHY THE SAVINGS AND LOAN CRISIS?

Without question, the many changes that have occurred for banks and other depository institutions are extensive and revolutionary.[1] Not only has the scope of change been enormous, but the pace of change has been very swift.

Why have these profound and far-reaching changes occurred? What factors could have allowed these institutions to break so cleanly from the past? In general, the answer is found in some basic laws of economics involving reactions to competitive forces of the marketplace. To a large degree, market forces pressured bankers to develop financial innovations to circumvent a body of regulation originally enacted in response to the traumatic banking crisis of the 1930s. Moreover, sweeping federal legislation of the early 1980s and numerous changes in state laws covering depository institutions have had great impact. Both federal and state legislation not only eliminated a number of regulatory constraints of the past, but also allowed depository institutions to

1. Depository institutions are four in number: commercial banks, savings and loans, savings banks, and credit unions. Savings and loans and savings banks are collectively referred to as thrifts.

alter the nature of many of their assets and liabilities. Add to the above factors the explosion in technological progress in the computer and communications fields (which greatly increased the speed of change), and you have the ingredients of a truly remarkable revolution in the financial-services industry.

Although the competitive situation for depository institutions became virtually intolerable, especially during the years 1966–1980, a review of the regulatory framework that prevailed prior to that period provides an appreciation of the problems, market forces, and other factors underlying the need for the many recent changes.

OVERVIEW OF BANKING LEGISLATION OF THE 1930s

The most significant force that helped to shape the body of regulation existing prior to the 1980s was reaction to the nationwide banking crisis that accompanied the Great Depression. Many of the critical problems and crisis issues faced by depository institutions during the 1970s and early 1980s resulted from depression-spawned banking legislation. Even today, some of the legislation is part of our regulatory framework.

Near-Collapse of the Banking System

Between 1930 and 1933, more than 9,000 banks in the United States failed. (See Table 5-1 and Figure 5-1.) During this period, "runs on banks" occurred

TABLE 5-1

Number of Failed Banks (1900–1989)

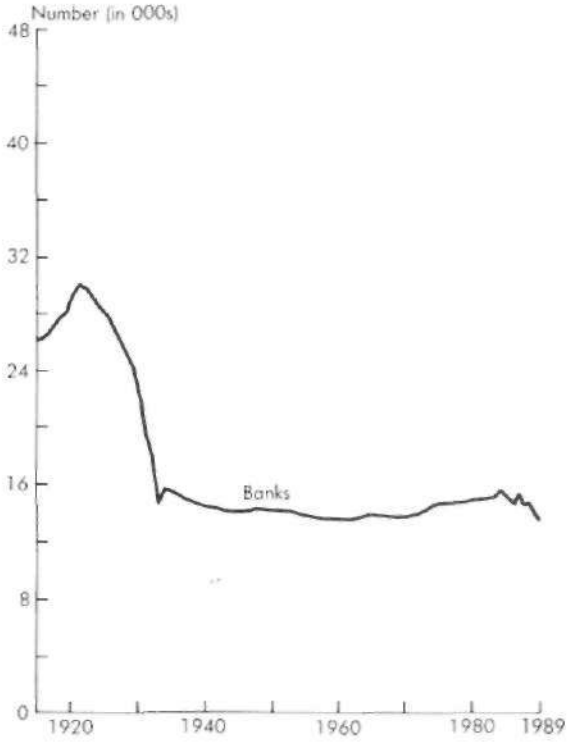
Year	Number
1900–1920	1,789
1921–1929	5,712
1930–1933	9,096
1934–1941	467
1942–1951	61
1952–1961	47
1962–1971	60
1972–1981	147
1982–1989[a]	934

[a]As of July 1989.

SOURCE: FDIC, *Annual Report* (various issues).

FIGURE 5-1

Commercial Banks in the United States



SOURCE: Board of Governors of the Federal Reserve System.

with such regularity that failures averaged about 40 per week.[2] The emergency became so severe that in March of 1933, after the onset of still another major bank panic, President Roosevelt declared a "bank holiday" and closed all banks until the situation calmed down. A wave of bank-reform legislation quickly followed.

2. This dramatic period of bank failures had followed a substantial decline in the number of banks during the economic prosperity of the 1920s. From 1921 to 1929 almost 6,000 banks, many of which were small one-office banks located in declining agricultural areas, suspended operations.

Banking Legislation of the 1930s

The banking panics of the early 1930s were blamed on (1) speculative activities of the 1920s and apparent conflicts of interest resulting from the participation of banks in investment banking functions, and (2) excessive competition for deposits. Congress was faced with the difficult task of drafting legislation designed to quickly restore confidence in the banking system in order to alleviate the crisis. In addition, lawmakers sought to create a strict body of regulation aimed at insuring long-run stability and freedom from bank failures. The passage of two highly significant acts—the Banking Act of 1933 and the Banking Act of 1935—accomplished these goals.

The Banking Act of 1933. Known popularly as the Glass-Steagall Act, the Banking Act of 1933 was revolutionary for its time. In effect it was a "package" of acts, consisting of highly important provisions generally designed to curb excessive competition among banks, increase federal supervision and regulation, and establish a system of deposit insurance. The following provisions were of major importance:

1. It established the Federal Deposit Insurance Corporation (FDIC) to insure deposits at commercial banks and savings banks. The obvious intention of this provision was to restore the public's confidence in the banking industry. Because of the rapid achievement of this goal, the FDIC provision is often called one of the most significant pieces of legislation in the history of banking.
2. It prohibited commercial banks from engaging in investment banking activities thus separating commercial and investment banking. Investment banking involves the underwriting and trading of securities. Prior to the passage of this act, commercial and investment banking were virtually integrated. The mixture of these two types of banking allegedly led to speculative activity and potential conflicts of interest. It was argued, for example, that some banks, when acting as investment bankers, would place slow-selling securities into their own commercial bank portfolios or into their trust departments, hence increasing the risk of losses.
3. It prohibited member banks of the Federal Reserve System (Fed) from paying interest on demand deposits in an effort to reduce excessive competition for such funds.[3] (Discussion of this and the following provision will be expanded later in the chapter.)

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3. A member bank is one that has membership in the Federal Reserve System; a bank not belonging to the system is called a nonmember. Federally chartered (national) banks must be members of the Fed, but membership is not obligatory for state-chartered banks.

4. It gave the Federal Reserve the authority to establish ceiling rates on savings and time deposits of all member banks. The Fed used its Regulation Q to implement this authority.
5. It generally left the branching restrictions of the McFadden Act of 1927 unchanged. It thus supported those provisions of the McFadden Act that (a) prohibited interstate banking and (b) required national banks to conform to the branching restrictions imposed by the laws of the states in which they were located.

The Banking Act of 1935. The primary purpose of the Banking Act of 1935 was to strengthen the powers of the Fed and extend the provisions of the Banking Act of 1933 to nonmember banks. Some provisions of the act are as follows:

1. It prohibited nonmember banks from paying interest on demand deposits.
2. It extended the Fed's power to set ceiling rates on savings and time deposits of nonmember banks.
3. It created the Federal Open Market Committee, today the Fed's powerful decision-making body regarding matters of monetary policy.
4. It expanded the power of the Fed's Board of Governors to set reserve requirements.
5. It placed greater restrictions on entry into the banking industry in an effort to reduce bank failures.

The long-run ramifications of some of these depression-born regulations are discussed later in the context of the key problems that were instrumental in creating the need for the passage of the banking legislation of the early 1980s.

Thrifts During the Great Depression

Because the commercial bank was by far the largest and most important depository institution, the great bulk of reform legislation of the 1930s dealt with that institution. Nevertheless, the turmoil in the financial markets during the Great Depression did result in limited, but significant, legislation designed to aid the much smaller thrift industry.

The Federal Home Loan Bank System (FHLB), established in 1932, consists of 12 regional banks with which thrifts can be affiliated. A Federal Home Loan Bank Board (FHLBB), located in Washington, supervises the activities of the 12 FHLBs. In 1934 Congress created the Federal Savings and Loan Insurance Corporation (FSLIC) to provide deposit insurance for savings and loan associations, much like the FDIC does for commercial banks and savings banks. Also, like the FDIC, the FSLIC examines and supervises its insured institutions and oversees mergers and liquidations of failing thrifts.

Throughout most of the history of depository institutions, legislation has tended to completely separate commercial banks from thrifts, both in terms of their deposits and other sources of funds (liabilities) and their uses of funds (assets). Regulation gave the commercial banks monopoly over demand deposits. Moreover, the banks could hold a much more diversified portfolio of loans and investments than could the thrift institutions. In contrast, the sources of funds for the thrifts legally consisted of savings and time deposits, and a very large percentage of the loan portfolio of the typical thrift consisted of long-term mortgages.

OVERVIEW: WORLD WAR II TO 1965

The banking regulations that had developed largely because of the impact of bank failures on the nation's economy generally did not interfere with the everyday functioning of the financial system until the mid-1960s. Deposit insurance, adopted in the 1930s, continued to be a rousing success.[4] Bank failures dropped to less than six per year during the post-World-War-II period. In general, Regulation Q ceilings had little effect on depository institutions because market interest rates remained below ceiling limits. In addition, there was an adequate spread between the average interest rate paid for the sources of funds and the average rate earned from the uses of such funds. Despite this relatively long period of generally profitable conditions, major problems were on the horizon. It is these problems and other key factors that will be addressed in the following sections of the chapter.

THE DEPOSITORY INSTITUTIONS DEREGULATION AND MONETARY CONTROL ACT OF 1980

For several years prior to the reform legislation of the early 1980s, much effort was expended by regulators, some banking and thrift leaders, and members of Congress to change the body of regulations under which depository institutions had operated since the 1930s. It had become increasingly apparent that some regulations had been made obsolete by significant changes in the everyday functioning of financial services markets, technological advancements, long-term changes in the levels of inflation and interest rates, and general economic conditions. Several groups conducted very thorough private and public studies of the financial marketplace. Most of the studies recommended sweeping reforms, some of which were adopted in the federal legislation of the 1980s.

The most important of these studies were conducted by the President's Commissions on Financial Structure and Regulation of 1971 (Hunt Report)

4. Credit unions did not have deposit insurance until 1970, when Congress established the National Credit Union Share Insurance Fund.

and Financial Institutions and the Nation's Economy of 1975 (Fine Study). Both studies emphasized key problems in the financial markets, and each strongly recommended that major steps be taken to deregulate depository institutions. The proposals offered by the reports found wide support among financial-industry participants, regulators, and politicians. In fact, some of the recommendations of the Hunt Study were incorporated in a proposed federal financial institutions act in 1973, while the Fine Study led to the introduction of banking legislation in 1975. However, Congress passed neither attempt at regulatory reform.

Despite increasing recognition of the problems and structural changes in the financial-services industries, not until the near-crisis conditions of 1979 and early 1980 did Congress act by passing the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) in March 1980. The Senate Banking Committee Chairman noted that the act would "create a level playing field" to help reduce competitive inequalities among different types of financial institutions. Senator Proxmire said the act was "...the most significant legislation...since the passage of the Federal Reserve Act of 1913."

The DIDMCA, an omnibus bill often popularly referred to as the Monetary Control Act, contains nine titles, each an act in itself. Each title deals with an aspect of reform of the financial system. The following discussion lists only the most important provisions of various titles and then provides overviews of the significant problems and other factors that brought about the need for specific reform measures.

Reserve Requirements and Pricing of Fed Services

Title I of DIDMCA attempts to enhance the ability of the Fed to implement monetary policy. One method chosen to achieve this goal was to subject all depository institutions to uniform reserve requirements.

Membership Problem. For a number of years it had been argued by Fed officials and others that uniform reserve requirements were necessary both for greater competitive equality among depository institutions and for purposes of better controlling monetary conditions. In the years prior to the passage of DIDMCA, the proportion of bank deposits subject to the Fed's reserve requirements was rapidly declining. This decrease occurred because member banks of the Fed were required to hold noninterest earning assets as reserves, while nonmember state banks could often satisfy state reserve requirements by holding interest-bearing assets, such as U.S. Treasury securities.

This membership "tax" caused many banks to withdraw from the system, because they were put at a severe disadvantage compared with state nonmember banks. The lost income, or opportunity cost, of holding nonearning reserves greatly increased in the latter 1970s as interest rates rose to record levels. Subsequently, not only did newly formed banks choose to remain nonmembers, but an increasing number of member banks dropped out of the system.

Even some national banks (which by law are required to be members) switched to state charters in order to escape membership.

The membership problem thus became one of the key factors pressuring Congress to initiate a legislative remedy. Once fully implemented, the new uniform reserve requirements reduced the burden on member banks, inasmuch as nonmember banks and other depository institutions were then subject to the same reserve requirements.

Pricing Fed Services. Title I also requires the Fed to impose explicit charges for services that it traditionally provided free to member banks. Moreover, these services must be made available to all nonmember depository institutions on the same terms offered to member banks. In general, the Fed prices must be based on all direct and indirect costs incurred in providing services.

A number of free services provided by the Fed over the years, such as check clearing and wire transfers, were defended as necessary to promote an efficient payments system. Nevertheless, for many years these services have been offered for a fee by correspondent commercial banks (those that service the needs of smaller or out-of-town banks) for their respondent banks.[5] It was argued that forcing the Fed to price its services would give incentives for private suppliers of similar services to offer more competition, thus enhancing overall efficiency of the payments system.

In past years the reluctance of the Fed to charge for services also was closely related to the membership problem. The provision of free services partly offset the opportunity cost to member banks of holding nonearning reserves, which in turn helped to slow down both withdrawals from membership and erosion of that portion of total bank reserves subject to the Fed's reserve requirements. Inasmuch as member banks can no longer avoid the cost of holding reserves by leaving the Federal Reserve System, the DIDMCA eliminated the Fed's fear of explicitly pricing services.

Deregulation of Interest-Rate Ceilings

Title II of DIDMCA required that all interest-rate ceilings on savings and time deposits were to be phased out over a six-year period. The long-standing Regulation Q authority of the Fed to limit interest rates was turned over to the newly formed Depository Institutions Deregulation Committee (DIDC).[6] Title

5. A correspondent bank (usually a larger institution) is one which provides services and advice for a respondent bank (usually a smaller institution).
6. The voting members of DIDC were the Secretary of the Treasury, the Chairman of the Federal Reserve Board of Governors, and the heads of the Federal Deposit Insurance Corporation, Federal Home Loan Bank Board, and the National Credit Union Administration. The Comptroller of the Currency was a nonvoting member.

II charged the DIDC with implementing this provision to achieve an orderly phaseout of all ceiling rates by March 31, 1986.

Historical Background of Regulation Q Ceilings. Both the prohibition on the payment of interest on demand deposits and the ceilings on interest rates that may be paid on savings and time deposits date from the Banking Acts of 1933 and 1935, but calls for a ban on interest on demand deposits occurred several times during various financial crises in the 1800s.

Demand Deposit Interest Prohibitions. Although the financial sector performed relatively well for several years after passage of the Federal Reserve Act in 1913, large numbers of banks failed in the 1920s, followed by widespread bank failures during the early years of the Great Depression. As they had in the 1800s, critics of the banking system argued that the practice of paying interest on demand deposits was a major cause of widespread bank failures during the 1920s and 1930s. Critics insisted that such interest payments were highly destabilizing because the practice led banks to compete for demand deposits by paying excessive rates to attract greater amounts of funds. To offset these higher costs and maintain profit margins, it was argued, banks had to seek out higher yielding, but much riskier earning assets than otherwise would be the case. Although this explanation for bank failures was widely accepted, studies in the 1960s indicate that there is little empirical evidence for these claims.[7]

Time Deposit Interest Ceilings. During the 1930s, one widely accepted argument held that excessive competition for bank savings deposits had forced banks to increase their interest rates, which then led to the acquisition of high yielding, but much more risky, assets to cover the increased costs. As was the case with regard to the charge of excessive interbank competition for demand deposits, subsequent studies have revealed little evidence to support this explanation of bank failures.

Ceiling Rates and Disintermediation

During the 25 years following the Banking Act of 1933, the debate regarding the wisdom of setting interest-rate ceilings was moot. Until the mid-1950s market interest rates remained below Regulation Q ceiling rates. Once market rates began to exceed ceiling rates, however, the Fed initially responded by

7. See study by Albert H. Cox, Jr., "Regulation of Interest on Demand Deposits," *Michigan Business Studies* 17, no. 4 (1966). Also see Bryon Higgins, "Interest Payments on Demand Deposits: Historical Evolution and the Current Controversy," *Monthly Review*, Federal Reserve Bank of Kansas City (July–August 1977).

raising the ceiling limits. This policy of accommodation prevailed until the credit crunch of 1966.

Faced with large expenditures for the Vietnam War, greater inflationary pressures, and other pressing economic problems, the Fed resorted to a very tight credit policy in 1966. As part of this stance, the Fed refused to raise interest-rate ceilings on deposits when market rates exceeded those ceilings. In fact, the Fed requested and won approval from Congress to extend ceilings on deposits of savings and loans (S&Ls) and savings banks, with such ceilings administered by the Federal Home Loan Bank Board for S&Ls and the Federal Deposit Insurance Corporation for savings banks. Also, in an effort to insulate thrift institutions from too much commercial bank competition, interest-rate ceilings on thrift deposits were set slightly higher than those established for banks.

As money market rates moved significantly above Regulation Q ceilings in 1966, and in other tight-credit periods, massive but often temporary transfers of deposits from depository institutions into various money-market investments (such as U.S. Treasury bills) took place. These transfers, called *disintermediation*, were very disruptive, of course, and led to occasional but severe restrictions of housing credit.

Beginning in 1977, a sustained rise carried market interest rates well above Regulation Q limits. (See Figure 5-2.) This sustained increase in market rates further aggravated the disintermediation problem, and the soaring opportunity cost of holding noninterest earning reserves encouraged even more member banks to withdraw from the Federal Reserve System. Moreover, rapid technological advances plus the overall profitability of commercial banking provided strong incentives for nonbank business firms to greatly expand their offerings of banklike and other financial services.

In addition to the above factors, a major innovation of the 1970s that greatly increased the severity of the disintermediation problem was the money market mutual fund (MMMF). The MMMF is a type of mutual fund that offers its shares for sale to both large and small investors and then uses the funds to acquire money-market securities, such as U.S. Treasury bills, commercial paper, negotiable certificates of deposits, repurchase agreements, and so forth. Although MMMF shares are not insured, the funds were able to attract investors by offering high market rates of interest, limited check-writing privileges, ease of entry and exit without load fees or withdrawal penalties, and the relative safety of their high quality, very liquid, short-term investments.

In 1978, total assets held by MMMFs were less than $4 billion, but by 1980 the figure had risen to more than $60 billion. This expansion then soared to almost unbelievable levels, reaching more than $230 billion by 1982. Clearly, the rapid growth of MMMFs put enormous competitive pressure on depository institutions, as most of the increase in assets came from deposits transferred from these institutions. The loss of deposits, plus other problems,

FIGURE 5-2

Regulation Q Ceiling Rates at Thrift Institutions Compared with 3-Month Treasury Bill Rates

SOURCE: Board of Governors of the Federal Reserve System.

forced hundreds of depository institutions, especially thrifts, to suspend operations or merge with stronger firms.

The astonishing growth of the MMMFs, the rapid expansion of banklike and other financial services offered by nonbank firms, plus other problems to be discussed later, put enormous competitive pressure on banks and thrifts. These depository institutions, together with the housing and building industries, in turn, exerted substantial political pressure on Congress to provide relief for the overwhelming problems caused by deposit losses and other issues. In this way, the disintermediation problem was a very important factor that helped to force Congress to move toward a major overhaul of regulations covering depository institutions.

NOW and Other Checkable Deposits

The provisions of Title III of DIDMCA were designed to contribute to competitive equality among the depository institutions by permitting each of them to offer nationwide interest-bearing "checkable" deposit accounts. These are essentially transactions accounts that are functionally equivalent to demand deposits, but unlike demand deposits, they bear explicit interest. Commercial

banks, savings and loans, and savings banks were authorized to offer checkable accounts called negotiable-order-of-withdrawal (NOW) accounts. Credit unions were allowed to offer share-draft accounts. Both accounts earned interest, subject to uniform interest-rate ceilings. The act, however, did not authorize the payment of interest on demand-deposit accounts held by corporations.

Also legalized were automatic transfer services (ATS) for shifting funds from savings to demand deposit accounts, and remote-service units, which facilitate deposits to and withdrawals from accounts, loan payments, and related transactions. The act also increased deposit insurance from $40,000 to $100,000 at federally insured depository institutions.

Usury Laws

Title V of DIDMCA overroad state usury laws. Except for home-mortgage loans and mobile-home loans, the usury provisions were temporary. Also, states could override DIDMCA, and the act exempted state usury laws on business and agricultural loans only for a period of three years.

A usury law is one that limits the interest rate a lender can charge for certain types of loans. In general, the laws have been aimed at protecting lower-income individuals and small-business borrowers from excessive interest charges. Ironically, when market interest rates have moved above government imposed usury limits, often the effect has been to reduce, and in some cases eliminate, the availability of credit to the very borrowers the law was to protect. For example, if the usury rate in a state is 12 percent and the prime rate of interest is 18 percent, many borrowers such as small businesses, home builders and buyers, and farmers are likely to be forced out of the market as lenders seek to ration credit to preferred customers. Lenders have also designed practices, such as charging points on mortgage loans, to override the usury limits. In effect, points require borrowers to pay a portion of the total interest charges up front as a condition of obtaining loans.

Overall, as interest rates rose to record levels in the late 1970s, it became evident that usury limits had become wholly unrealistic as lenders in some areas at times virtually ceased all lending to various borrowers. Some states exerted a great deal of effort to amend their usury laws. In some cases such efforts faced stiff opposition; in others, a change in the laws required amendments to state constitutions. Although some states had succeeded in tying usury rates to market rates, others fared poorly in their attempts for changes, with borrowers suffering the consequences. Thus, it was evident that federal legislation was necessary.

The Thrift Problem

Title IV of DIDMCA focused on the "thrift problem," which involves the imbalance between the assets and liabilities of thrifts (S&Ls and savings

banks). The act attempted to relieve the maturity imbalance by allowing federally chartered thrifts to make short-term consumer loans and variable-rate mortgage loans.

Over the years thrifts, constrained by regulation, tax incentives, and overall management philosophy, had specialized in long-term, fixed-rate mortgage lending. For these assets to add to the overall profitability of lenders, their earnings had to exceed the costs of customer deposits and other sources of funds.

From the mid-1960s through the 1970s, generally high rates of inflation and rising, volatile market rates of interest changed a reasonable spread between returns on thrift portfolios and the interest costs on sources of funds into serious liquidity and solvency problems. By 1981, many thrifts experienced negative yields, because they had to pay more for funds than could be earned on their assets. Even without rate ceilings on deposits, disintermediation, competition from MMMFs, and other problems, the maturity imbalance between assets and liabilities and the steady decline in spreads during the late 1970s and early 1980s would have greatly limited the ability of thrifts to compete and remain viable under the old body of regulations.

Other Titles of DIDMCA

For the purposes of this chapter, our focus has been on some provisions of five of the nine titles of DIDMCA. The emphasis on these provisions provided a look at the most important goals of DIDMCA. Because the remaining provisions are not essential to the discussion, they are not considered.

PROBLEMS CONTINUE 1980–1982

For a number of months after the passage of DIDMCA, an increasing number of thrift institutions found themselves in severe difficulty. The previously discussed thrift problem became a thrift crisis. In mid-1980 interest rates started to rise rapidly and did not decline until late summer of 1982. The prime rate of interest reached 20 percent in April 1980 and stood at 21.5 percent by the year's end. By the summer of 1981 the prime rate was still fluctuating between 20 and 21 percent. At these very high market rates of interest, long-term assets of thrifts were often earning far less than the sources of funds. (See Figure 5-3.)

To add to the overall problems, many MMMFs were paying interest well in excess of 15 percent, while passbook savings accounts in banks and thrifts were held to 5.25 and 5.5 percent. The disintermediation problem worsened and continued to deplete the deposits of depository institutions. In 1981, it was reported that about 80 percent of all thrifts were losing money, and losses in

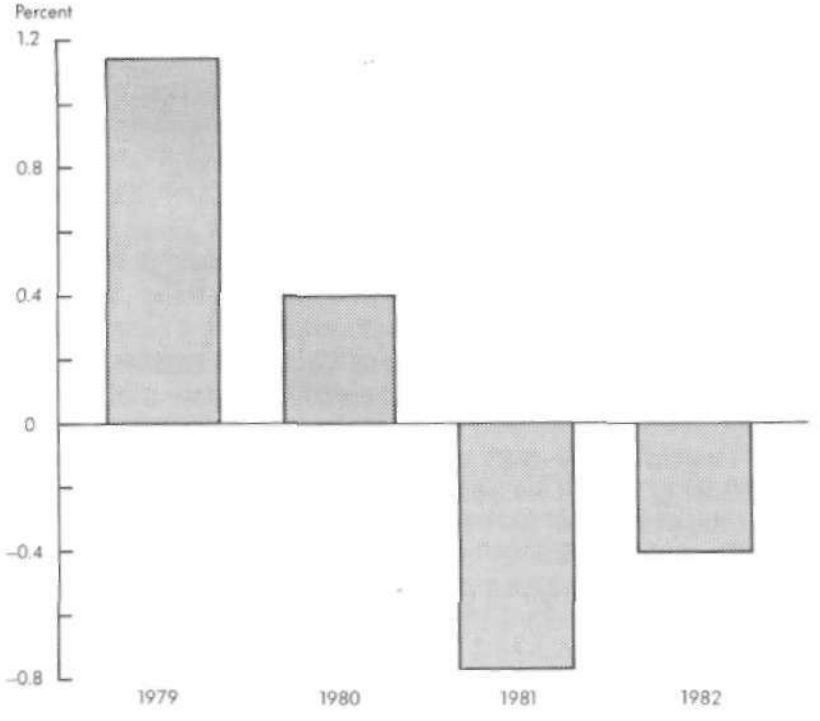
the S&L industry soared to $4.6 billion. (See Figures 5-4 and 5-5.) During 1981, the FSLIC provided about $1 billion in aid to troubled thrifts.

Under these adverse conditions, the Depository Institutions Deregulation Committee (DIDC), established under DIDMCA, could not provide the assistance needed. If the DIDC, for example, raised the interest-rate ceiling on passbook savings, say from 5.5 to 7 percent, it is clear that this would have simply aggravated the already serious cost problems for thrifts. Thus, DIDC's tinkerings with Regulation Q could eliminate neither disintermediation nor the maturity imbalance of thrifts' balance sheets.

Although many types of new deposits were permitted in the last half of the 1970s and early 1980s, none of these allowed depository institutions to compete effectively with MMMFs. Even new accounts that permitted the payment of money-market rates of interest were burdened with sizable mini-

FIGURE 5-3

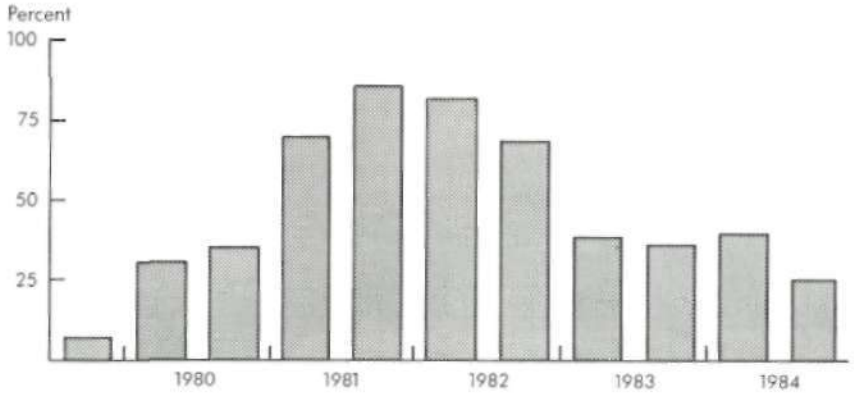
Percent Spread for FSLIC-Insured Thrift Institutions



SOURCE: *Quarterly Review*, Federal Home Loan Bank of Cincinnati (1984).

FIGURE 5-4

Percentage of FSLIC-Insured Thrift Institutions Posting Losses



SOURCE: *Federal Reserve Bulletin* (March 1985).

mum deposits and costly penalties for early withdrawals. The completely liquid MMMFs, on the other hand, had much smaller minimum deposit requirements and no penalty for withdrawals. Hence, it became increasingly apparent that the only realistic way for depository institutions to compete with the MMMFs was to receive authority to offer a very similar deposit account.

Despite the fact that the 3.9-percent inflation rate for 1982 was far below the rates of the previous three years, the prime rate during the first half of 1982 remained between 15 and 17 percent, and closed the year at 11.5 percent. Although the declining inflation and interest rates were favorable developments, for a large number of thrifts help arrived too late. In fact, 1982 was in some ways a worse year than 1981. During the fall of 1982, thrifts were failing at an average of three per week, whereas for many years prior to 1981 failures averaged less than three per year. Losses for the S&L industry for 1982 totaled almost $4.3 billion. Table 5-2 illustrates the thrift problem in terms of the rapid decline in the number of firms. After much delay and debate by lobbyists, regulators, financial-market participants, and politicians, the extreme crisis atmosphere finally forced Congress to take legislative action.

The Garn-St. Germain Act of 1982

Like DIDMCA, the Depository Institutions Act of 1982 (Garn-St. Germain Act) contains a number of titles. The main focus of the act was to prevent the collapse of the thrift industry. One group of provisions emphasized the

FIGURE 5-5

Net Income of FSLIC-Insured Thrift Institutions

SOURCE: *Combined Financial Statements, FSLIC-Insured Institutions* (1979–1982) Washington, D.C.: Federal Home Loan Board.

emergency powers of regulators to facilitate the immediate rescue-and-support efforts for thrifts until fundamental reforms incorporated into the legislation could become effective. Another major category of provisions attempted to change the nature of the industry to such an extent that, in the long-run, thrifts could exist as viable, competitive institutions under various and rapidly fluctuating economic conditions.

Emergency Powers. The act provides the FDIC and FSLIC with a framework to be used for arranging emergency acquisitions for failing depository institutions across both state lines and institutional barriers. Actually, prior to the passage of the act, the Fed and the FHLBB had authorized both interstate and interindustry mergers; thus, this provision merely legalized what regulators had already accomplished. The act granted the FDIC powers to authorize the sale of a large, failed commercial bank, or closed or troubled

TABLE 5-2

Number of All Savings and Loan Institutions

Year	Federally Chartered	State Chartered	Total Institutions
1960	1,873	4,447	6,320
1970	2,067	3,602	5,669
1980	1,985	2,628	4,613
1981	1,907	2,385	4,292
1982	1,727	2,098	3,825
1983	1,553	1,949	3,502
1984	1,478	1,913	3,391
1985	1,419	1,825	3,244
1988[a]	1,720	1,229	2,949

[a]Includes 621 savings banks.

SOURCE: FHLBB and United States League of Savings Institutions.

savings bank to another federally insured institution, whether in-state or out-of-state.[8] In addition, the FSLIC could exercise similar powers, regardless of the asset size of the failing thrift involved.[9]

Other emergency powers relate to the aid provided by the FDIC and FSLIC for closed, insolvent, or troubled banks and thrifts. The insurers may make loans to, put deposits in, and make contributions to troubled institutions or firms that acquire them. They may also buy or assume an insured institution's assets or liabilities, set up extraordinary mergers and acquisitions, arrange charter conversions and, when necessary, guarantee against loss the rescuing institution or the company controlling it. The act gave similar powers to the National Credit Union Administration (NCUA) in order to provide aid for troubled credit unions.

The act also permitted the use of net-worth certificates, backed by the FDIC and FSLIC, to aid some seriously troubled institutions. The net-worth certificate is a special security issued by a depository institution with severely

8. A *large* commercial bank or savings bank was defined as one with assets in excess of $500 million.
9. The FDIC and FSLIC may solicit offers to buy banks and thrifts from any qualified purchaser according to the following priorities: like in-state institutions; like out-of-state institutions; different type of in-state-institutions; different type of out-of-state institutions. Priority is to be given to adjacent state institutions, if out-of-state offers are involved. Also, if the lowest acceptable bid is from an out-of-state institution, then the agencies must accept reoffers from original in-state bidders, if their offers were within 15 percent or $15 million, whichever is less, of the lowest acceptable offer.

deficient net worth. The certificate is exchanged for a promissory note from the FDIC or FSLIC. The certificate is then treated as capital for regulatory purposes. When the depository institution returns to a profitable position, it must redeem the net-worth certificate.

Long-Run Fundamental Reforms. Long-run reforms likely will prove to be the most important aspects of the act, because they greatly alter the possible sources of funds for, and uses of funds by, thrift institutions. The most important provision of the act granted depository institutions the authority to offer money-market-deposit accounts (MMDAs), with no interest-rate ceilings. This provision provided a definite break from past regulatory barriers that restricted competition for funds. It also offered an account that could directly compete with the MMMF. Title III of the act noted that the MMDA was an account "directly equivalent and competitive with money market mutual funds."

The new money-market-deposit account was offered on December 14, 1982 and had an original minimum balance of $2,500 (changed to $1,000 on January 1, 1985 and zero on January 1, 1986), paid interest similar to market rates, and allowed six transfers per month—three by check and three by preauthorized, automatic, or telephonic means. There was no reserve requirement on personal MMDAs, but nonpersonal accounts were subject to a 3-percent reserve requirement.[10]

The act broadened the types of customers who could hold various deposits. First, it authorized federal, state, and local governments to hold NOW accounts. (Previously, only persons and nongovernment, nonprofit organizations could hold these accounts.) Second, it permitted federally chartered S&Ls to offer demand deposits to customers that have a business-loan relationship with the S&L, or that wish to receive payment due from nonbusiness customers. The act also required DIDC to eliminate Regulation Q rate differentials between commercial banks and thrifts by January 1, 1984.

On the asset side of the balance sheet, S&Ls were permitted to invest up to 55 percent of their assets in three categories of commercial loans: (1) up to 40 percent of assets in loans secured by commercial real estate; (2) up to 5 percent of assets in secured or unsecured commercial loans; and (3) up to 10 percent of assets in leases. Under DIDMCA the S&Ls were given authority to invest up to 20 percent of assets in consumer loans; Garn-St. Germain increased this amount to 30 percent. DIDMCA's authorization for unlimited power to invest in federal government and municipal general obligation securities was extended to include state and local revenue bonds.

10. Shortly after the October 1982 passage of Garn-St. Germain, the DIDC acted to authorize the Super-NOW account. This account allowed unlimited checking and unregulated interest rates. But because it was classified as a transactions account, it was subject to a 12-percent reserve requirement.

Effects of the Early 1980s Legislation

The legislation of 1980 and 1982 provided extensive freedom for depository institutions to innovate. The new lending and deposit opportunities for thrifts opened the door to a much broader financial market. Many larger, more aggressive S&Ls quickly ventured into unfamiliar and more risky types of lending and investing—in some cases with disastrous results. However, most thrifts, some of which were ailing and battered, were not in a position to take advantage of their new powers. While it is true that the new and increased powers may someday lead to an end of the distinction between banks and thrifts, by early 1990 a great many thrifts had done relatively little to erase the differences.

As previously indicated, the major purpose of the Garn-St. Germain Act was to rescue the troubled thrift industry. By 1983 the S&L industry was able to reverse the record losses of the two previous years. It is clear, however, that the legislation had little to do with the improvement in profitability. Rather, the significant drop in interest rates, starting in August 1982 and continuing irregularly through mid-1987, was much more beneficial for the industry than the emergency provisions of Garn-St. Germain. Despite the return to profitability for the industry as a whole, a large number of S&Ls continue to experience grave financial difficulties. The ongoing S&L crisis is covered in a subsequent section of this chapter.

By 1983, the deregulation of interest-rate ceilings was virtually complete as DIDC eliminated rate limits on all time deposits of more than 31 days. As scheduled, all Regulation Q ceilings were totally eliminated on March 31, 1986.

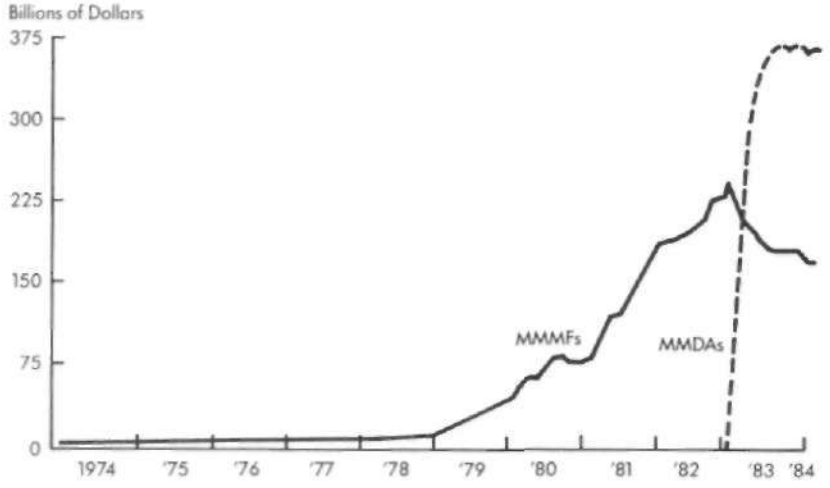
The MMDAs authorized by the 1982 act proved to be an immediate success. As many billions of dollars moved into the new deposit accounts, MMMFs experienced massive declines in assets. Only six weeks after its introduction, MMDAs exceeded the $242-billion December 1982 peak of MMMFs. As Figure 5-6 indicates, MMDAs soared to almost $400 billion by 1984. Most of the funds that went into MMDAs were transfers from other lower-yielding deposits of banks and thrifts, thus increasing the overall cost of funds for these institutions. On the other hand, in the year following the introduction of MMDAs, total assets of MMMFs declined about $100 billion. In October 1989, however, assets of MMMFs totaled about $350 billion, as savers found both the funds and deposit accounts to be attractive financial alternatives.

INTERSTATE BANKING

For several decades following legislation in 1927 and the mid-1930s, banks enjoyed unique protection from competition. Generally, the legislation at-

FIGURE 5-6

Comparison of the Growth of MMDAs with MMMFs



SOURCE: Board of Governors of the Federal Reserve System.

tempted to ensure the safety and stability of the commercial banking system. Among other restrictions, the laws placed limits on geographic competition by prohibiting interstate banking and forcing national banks to abide by the same regulations imposed on state banks in the host state. During the last few years, however, the geographic constraints on banks have been bypassed and broken by market forces and legislation.

Bank Holding Companies

A multibank holding company owns or controls two or more banks. Prior to the passage of the Bank Holding Company Act (BHCA) of 1956, multibank holding companies (BHC) were used to establish interstate banking networks. A section of the act, known as the Douglas Amendment, was written to prevent the BHC from circumventing federal restrictions on interstate banking. The amendment closed loopholes in previous federal laws by preventing interstate acquisitions unless the states where the acquired banks were located specifically allowed such purchases. Until 1975, no state permitted these acquisitions. Under the grandfathering provisions of the Douglas Amendment, the BHCs already engaged in interstate branching were allowed to retain those operations.

Nonbank Banks

The 1970 amendment to the BHCA defined a commercial bank as "any institution which (1) accepts deposits that the depositor has a legal right to withdraw upon demand, and (2) engages in the business of making commercial loans." Any firm that owns a bank, as so defined, is a bank holding company (BHC) subject to the regulations associated with the act. The key word in this legal definition is *and*. To be a commercial bank an institution must accept demand deposits *and* make commercial loans. If it receives a bank charter and offers demand deposits *or* commercial loans, but not both, then it is not a commercial bank. We call this unique institution a *nonbank bank*.

By exploiting this loophole in the law, nonbanking business firms, such as Sears, J.C. Penney, and E.F. Hutton, found that they could offer banking services by creating nonbank banks. As owners of these institutions, the firms are able to avoid BHC status, thus escaping the requirement to divest themselves of all business activities not permitted to BHCs such as retailing and manufacturing. At the same time, the companies own institutions that are chartered by banking regulators and therefore can be members of the Fed and obtain FDIC deposit insurance. Hence, nonbanking business firms enjoy the benefits of owning an institution that is almost like a commercial bank, without being subject to the burden of the BHCA regulations.

Although BHCs themselves are subject to the BHCA, they also have reason to exploit the loophole. The nonbank banks they create can be used as vehicles to cross state lines with what are considered legally to be nonbanking subsidiaries. Because the loophole allows BHCs to bypass the Douglas Amendment's prohibition on interstate banking, they can establish nonbank banks in various states without permission from the states involved.[11] The BHC gains the following major advantages by locating nonbank banks in states where it would not be permitted to operate full-service banks:

1. New banking locations offer the opportunity to expand its deposit base. Although a nonbank bank may choose not to accept demand deposits, it can offer NOW accounts, MMDAs, certificates of deposits, and other accounts.
2. New locations permit diversification of business-loan customers.
3. New locations can help the BHC position itself as it waits for laws which permit entry of out-of-state full service banks.

By mid-1989 there were numerous nonbank banks operating in the United States, with many applications to open additional banks awaiting final approval.

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11. Recall that the Douglas Amendment prohibits a BHC from purchasing a commercial bank in another state unless that state permits the acquisition.

The Former Chairman of the Federal Reserve Board of Governors, Paul Volcker, was a strong foe of the nonbank bank, and told Congress that one of his highest legislative priorities was the closing of the BHCA loophole. Volcker and his allies, however, faced some formidable opponents—the Reagan Administration, the Comptroller of the Currency, and most important, the U.S. Supreme Court.

Although it is not likely that the nonbank bank will remain in its current form during the next few years, its existence will have a lasting effect on banking. It has helped to focus attention on interstate banking issues and is likely to help speed the final dismantling of interstate restrictions. It has also allowed other nonbanking business firms to offer more banking services, further eroding the separation of banking and commerce. Hence the nonbank bank has played an important role in the continuing movement to deregulate both geographic and product markets in banking.

REGIONAL BANKING

Since 1983, an important change in the banking industry has been state legislative action to establish regional interstate banking agreements. The lack of federal legislation has tossed the interstate banking issue into the laps of state legislatures. By the end of 1988, more than 40 states had enacted laws that allowed interstate expansion as permitted under the Douglas Amendment to the BHCA. The most important legislative action takes one of the following forms:

1. *Reciprocity Laws*. Massachusetts, for example, will permit BHCs located in other New England states to acquire Massachusetts banks on a reciprocal basis. New York will reciprocate with any state.
2. *Unrestricted Laws*. Alaska and Maine, for example, will allow out-of-state banks entry, but requires no reciprocal treatment.

Four New England states established the first regional banking compact. Lawsuits filed by Citicorp and a small Connecticut bank, however, delayed regional acquisitions and mergers. These institutions challenged the regional reciprocal limitations of the New England compact. But in June 1985 the U.S. Supreme Court ruled that regional compacts are constitutional and banks from outside states can be barred from participating. The decision removed the temporary cloud from this form of interstate banking expansion.

The high prices of bank stocks combined with regulatory pressure to raise capital ratios forced large money-center banks to scale back interstate acquisition plans during late 1985 and 1986. Many large banks switched their attention to the acquisition of troubled out-of-state thrifts as their major hope for

interstate expansion. Citicorp, for example, gained entry into California, Nevada, Illinois, and Florida by acquiring failing thrifts.

In 1986, *superregional* banks came to the forefront. The superregionals resulted from mergers and acquisitions between relatively large regional institutions. The merger of First Atlanta Corporation and Wachovia Corporation, for example, gave rise to First Wachovia Corporation, a superregional with almost $17 billion in assets.

Garn-St. Germain and Interstate Banking

The large increase in the number of troubled thrifts brought about the need for more merger and capital-raising solutions, even if that assistance had to come from across state lines. The Garn-St. Germain Act provided for interstate acquisitions of failing thrifts by healthy thrifts, or if necessary, by commercial banks. Since the passage of the act in 1982, a large number of interstate acquisitions have occurred. It should be noted, however, that the act did not permit one healthy institution to acquire another sound one. In August 1989, however, federal legislation allowed the Federal Reserve to authorize bank holding companies to buy healthy savings and loan institutions as well.

Other Methods of Achieving Interstate Banking

Actually, an institution does not need a brick-and-mortar presence to engage in certain types of interstate banking business. A New York bank, for example, might sell a negotiable certificate of deposit to an investor in Oregon or Texas, thus raising funds without a physical presence. In most cases, however, banking does require this presence. The discussion of interstate banking will conclude by reviewing the more traditional methods of accomplishing some degree of interstate business.

Loan-Production Offices. Loan-production offices cannot accept deposits but do provide the means to solicit local commercial loan business. The home offices of the bank must approve each loan, however. In 1989 about 45 banks operated over 200 loan-production offices in nearly 35 states.

Nonbank Subsidiaries of BHCs. For years BHCs have established interstate nonbank subsidiaries. The BHCA of 1970 provides that BHCs may engage in certain nonbank activities, which are closely related to banking.[12] Because the subsidiaries are not banks, once established they may open offices

12. Some of the nonbank subsidiaries approved by the Fed include: mortgage banks, finance companies, credit card firms, industrial banks, leasing firms, insurance-underwriting companies, bookkeeping and data processing firms, and investment and financial-advising firms.

in any number of states. About 5,500 interstate subsidiaries were in operation in 1989.

Edge Act Corporations. Edge Act Corporations are subsidiaries of U.S. banks formed to engage in international banking and financial operations. These offices, which date from 1919, can operate interstate. Currently there are about 200 Edge Act offices in the United States.

Grandfathered Interstate Banking. Under the Douglas Amendment's grandfathering provision, the 12 BHCs engaged in interstate branching when the BHCA of 1970 was enacted were allowed to retain such operations. Prior to the passage of the International Banking Act of 1978, foreign banks operating in the United States could freely cross state lines. Domestic banks, of course, did not have this authority. Because of this and several other disparities, Congress agreed to correct the competitive inequities. The 1978 act required foreign banks to face the same branching and interstate prohibitions as domestic banks. The foreign banks, however, enjoyed the benefits of the act's grandfather clause, which permitted more than 100 banks to retain interstate banking operations.

THE BANK-FAILURE PROBLEM

For many decades prior to World War II, the United States had the dubious distinction of possessing the highest bank-failure rate of any major nation. After establishment of the FDIC in 1934, however, a remarkable decline took place and post-World-War-II failures averaged about six per year until 1981. Unfortunately, the number of bank failures has increased steadily over the past several years. The number reached 200 in 1988, more than in any other year since the Great Depression. (See Table 5-3.)

Failures in Tennessee and other areas in the early 1980s were largely the result of fraud and insider abuse. Fraud and embezzlement were, and still are, major causes of bank failures. (The FDIC reported that between 1949 and 1970 no less than 65 percent of failures resulted from fraud.) In more recent years, the FDIC noted that the failures of large banks in San Diego, New York, Oklahoma City, and Knoxville were caused by "irregular" and "unusual" loan losses. During 1985 and 1986, failed banks were generally smaller than those that failed in the early 1980s. This decrease in average size mainly reflected the greater concentration of failures within farm-belt states, where banks tend to be relatively small. Depressed farmland and commodity prices persisted well past 1987 and caused additional farm-bank failures.

Also in 1985, a substantial number of bank failures occurred in Texas and Oklahoma, two major oil-producing states. The problems worsened in 1986 and continued through 1989, as much larger banks in these two states suffered massive losses from energy-loan defaults. Other recent failures resulted from

TABLE 5-3

Bank Failures, 1980–1989

Year	Number of Failed Banks
1980	10
1981	10
1982	42
1983	48
1984	79
1985	120
1986	138
1987	184
1988	200
1989[a]	130

[a]As of July 1989.

SOURCE: FDIC, *Annual Report* (various issues).

problem loans in the real-estate markets. Surprisingly, bank regulators maintain that defaults on foreign loans do not appear to have contributed significantly to recent bank failures, although some large domestic banks hold many billions of dollars in nonperforming international loans.

Some critics argue that recent deregulation gives banks incentives to take excessive risks. They also suggest that excessive risk-taking is fostered by a system of deposit insurance that at least partially insulates banks from potential losses that may result from higher levels of risk. Others discount the theory that deregulation is a direct cause of failures. They do admit, however, that deregulation, plus heightened and new competition from both banking and nonbanking firms, has meant that banks are forced to operate in a much harsher environment, where such abuses as fraud, embezzlement, insider abuse, and general mismanagement exact much greater penalties than ever before.

The FDIC "bailout" of Continental Illinois in 1984 is a classic example of banking problems in the 1980s. Without question the nation's seventh largest bank would have collapsed without government help, although the situation technically was not a bank failure. The repercussions of this near collapse and federal rescue are still being felt.

The Continental Illinois Crisis

The frailty of Continental became a matter of concern in 1982, when the bank suffered heavy losses on energy loans purchased from the failed Penn Square Bank. Subsequent revelations indicated that Continental was anticipating major problems with loan losses in its foreign, energy, agricultural, and

worths of 0 to 3 percent of total assets. Regulators and many thrift executives generally agreed that the massive losses had not yet peaked.

To a great degree, the stunning setback in S&L industry earnings reflected huge losses by institutions located in the nation's Southwest. In the mid-1980s, the collapse of oil prices dealt a fatal blow to thrift institutions and commercial banks in that area. During the 1970s and early 1980s, the economies of the oil-producing states of Texas, Oklahoma, and Louisiana were booming. In the mid-1980s, however, the price of oil plunged from almost $30 to $10 per barrel. As a result, most oil-producing firms suffered enormous losses. Not only did their commercial-bank lending institutions share in these losses, but S&Ls were badly hurt. Because of the severe economic depression in the area, the making of risky development and real-estate construction loans, and in many cases, the illegal and unethical practices of management, almost half of the S&Ls in Texas, Oklahoma, and Louisiana were declared insolvent.

The rapid decline in the reserves of the FSLIC further complicated the savings and loan crisis. In 1986 the federal agency revealed that it faced enormous future losses and would have to spend at least $25 billion to merge or close insolvent S&Ls during the next few years. The FSLIC held reserves of only $4.6 billion at the end of 1985, and by January 1987, only $1.9 billion of reserves were available to insure deposits totaling $890 billion. Congress considered but failed to pass a plan to provide $15 billion in additional reserves in 1986. Finally, after the FSLIC became insolvent, it was recapitalized by the Competition Equality Banking Act of 1987.

Efforts by regulators to liquidate, sell, or merge failed or failing S&Ls were badly hampered by a lack of funds. Hundreds of insolvent institutions were allowed to operate simply because the FSLIC's insurance fund was inadequate to finance liquidations or to assist with mergers or sales of the failed S&Ls.

During 1988, several major sales and mergers of insolvent S&Ls took place, but these transactions required the use of special, large tax breaks for buyers and the issuing of long-term notes by regulators to buyers to "sweeten" the terms of purchases. The long-term notes, of course, committed the federal government to substantial future payments to buyers who were relieved of paying off major portions of the liabilities of the failed S&Ls, which had been purchased or merged. These arrangements were often subject to bitter criticism by many politicians, thrift experts, and others.

In February 1989, President Bush submitted to Congress a massive thrift-bailout plan. At that time, the Federal Deposit Insurance Corporation (FDIC) was authorized to seize control of insolvent S&Ls in anticipation of the passage of the proposed legislation. The FDIC was charged with the difficult task of protecting the assets of the failed S&Ls until the new law provided funds to liquidate or sell them. By August about 265 insolvent S&Ls were under the control of the FDIC. Federal officials estimated that by the end of 1991, as many as 425 additional failed S&Ls would be seized.

THE FINANCIAL INSTITUTIONS REFORM, RECOVERY, AND ENFORCEMENT ACT OF 1989 (FIRREA)

On August 9, 1989, after months of extensive congressional hearings and debate, Congress passed and President Bush signed into law a sweeping thrift-bailout bill, the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA). The historic bill, however, was far more than a costly bailout measure. As noted by Senator Donald Riegle, chairman of the Senate Banking Committee, "There is a massive restructuring to take place under the law."

The huge 1000-page bill contains numerous changes in the financial-services industry, blurring further the differences between commercial banks and thrifts. In many ways the legislation reintroduces strict regulation of thrifts. Because of the law's sometimes harsh financial penalties and restrictions, many analysts predict that the bill will encourage or actually finance the demise of hundreds of now marginally profitable S&Ls, in addition to the hundreds of insolvent institutions.

Large numbers of S&Ls currently enjoying average earnings might find it impossible to exist under some provisions of the new law (described below). Many institutions are apt to have extreme difficulty paying the extra deposit insurance premiums, while simultaneously being deprived of most of their Federal Home Loan Bank dividends expropriated by the legislation. Moreover, the bill's tougher capital requirements are apt to be beyond the reach of many S&Ls, which are not strong enough to attract outside capital from new investors (stockholders).

The major provisions of the landmark legislation are as follows:

Cost

At least $166 billion was needed to close or sell hundreds of insolvent S&Ls over a 10-year period. The bill provided $50 billion in borrowing over three years to close or merge more than 500 insolvent S&Ls and pay off depositors, whose billions of dollars of insured deposits were held by failed thrifts. In addition, the bailout will require more than $100 billion in interest over ten years. The law required that $20 billion of the bailout funds be spent by September 30, 1989 (the end of the government's fiscal year) in order to quickly put the rescue plan into action.

Regulation

1. The Federal Home Loan Bank Board, formerly the independent regulatory agency for S&Ls, was dismantled. Its regulatory divisions were transferred to the Office of Thrift Supervision, a new agency under the U.S. Treasury Department.

2. The new fund insuring S&L deposits, the Savings Association Insurance Fund, moved to the FDIC (the existing agency which insures deposits in commercial banks). The former S&L insurance fund, FSLIC, was dissolved.
3. The Federal Home Loan Banks remained independent, but lost their regulatory power. They will, however, continue to provide loans and other services to S&Ls.
4. A new agency, the Resolution Trust Corporation (Refcorp or RTC), was established to sell or liquidate insolvent S&Ls. The RTC was expected to offer for sale more than $300 billion in real estate and other assets of failed S&Ls.

Capital Requirements

1. Within 120 days after enactment of the law, owners of numerous S&Ls were required to invest more of their own capital in their institutions in order to (1) discourage risky loans and investments and (2) have the additional capital act as a cushion between future losses and government deposit insurance funds. Thus, S&Ls were required to have tangible capital (excess of real assets over liabilities) equal to 1.5 percent of assets almost immediately, and then reach 3 percent by the end of 1994. Officials and others estimated that as of August 1989 about 900 S&Ls, holding about $500 billion in assets, were then currently unable to meet the proposed 3-percent minimum capital ratio. Thus, it was evident that many S&Ls might have difficulty meeting the tougher capital requirements in the future.
2. S&Ls will be forced to employ more traditional accounting practices because many "accounting gimmicks" permitted by regulators in past years have been disallowed. For example, the often-used "fictional" capital resulting from "goodwill" must be stricken from the books of S&Ls over a five-year period.

Deposit Insurance Premium

1. Deposit insurance premiums for S&Ls were increased from 20.8 cents to 23 cents per $100 of deposits and could ultimately reach 32.5 cents per $100.
2. The premiums of commercial banks were almost doubled from 8 cents to 15 cents per $100 of deposits.
3. Depositors' accounts will continue to be insured up to $100,000.

Loans and Investments of S&Ls

1. S&Ls must keep nearly 70 percent of their assets in mortgage-related investments, compared with the previous 60-percent requirement.

2. S&Ls were required to invest in more banklike instruments, thus restricting such securities as high-risk, high-yield bonds (junk bonds), and direct equity holdings. The S&Ls have five years to phase out risky investments, after which they will be allowed to invest in riskier securities and loans only through separately capitalized affiliates that involve no risk to insured deposits.

Purchases of Thrifts by Banks

1. Commercial banks, for the first time, were permitted to buy healthy S&Ls. Under a previous law, banks could purchase only failed or failing S&Ls.
2. Healthy S&Ls may convert themselves into banks, but they will not be able to escape the higher S&L deposit insurance premiums for five years.

Housing Subsidies and Anti-Discrimination

1. The 12 Federal Home Loan Banks must set aside a portion of annual earnings to subsidize low-income mortgages at below-market interest rates. The banks must earmark $75 million in 1990 and increase subsidies to $150 million after 1995. Because most of these earnings would have otherwise been paid to S&Ls as dividends, this provision means less earnings for the S&Ls.
2. The new agency, the Resolution Trust Corporation, must give state and local nonprofit housing agencies a 90-day "right of first refusal" to purchase low-cost residential properties.
3. Mortgage lenders must collect and report data regarding the race, sex, and income level of customers and loan applicants, thus disclosing how well they serve poor and minority neighborhoods.

Anti-Fraud

1. The U.S. Justice Department will receive $75 million each year for three years to uncover and prosecute fraud at both S&Ls and commercial banks.
2. Maximum fines for financial-institution fraud was raised from $5000 to $1 million per day; maximum jail terms increased from 5 years to 20 years.

CONCLUSION

Over the years the U.S. financial system has undergone dramatic change, the pace of which quickened remarkably in the 1980s. The salient element of the

evolving structure of the financial-services industry is increased competition in the provision of various services. Banks want to go into other businesses while other nonbank financial institutions and even nonfinancial firms want to enter the banking business. Because of loopholes in existing legislation, some providers of financial services are regulated as banks, but many others are not.

To a great extent, the market for financial services has become national in scope, creating pressure for the removal of legal barriers to geographic expansion. Moreover, calls for additional reform of the statutory framework have been heard from several sources, including depository institutions, regulators, the Reagan and Bush Administrations, some members of Congress, and the general public.

Despite the substantial regulatory changes of the early 1980s, the piecemeal approach of those changes failed to address significant long-term problems. By 1985 it was clear that a new, more workable delineation of the roles of depository institutions, regulators, and nonbank suppliers of financial services was needed to correct the prevailing state of confusion and disarray. In early 1987, however, the minor legislative action was far too little, despite crisis situations in the S&L industry and, to a lesser degree, in commercial banking. Most observers argued that additional reforms and restrictions were needed. Hence, there was little question that further substantive and sweeping legislative action was both necessary and politically popular.

Finally in August 1989, after months of hearings and debate, Congress passed a massive landmark bill. The legislation not only provided for the bailout of the battered S&L industry, but also brought about substantial restructuring of the regulatory system and the thrift industry.

QUESTIONS FOR DISCUSSION

1. What were the major reasons for bank failures during 1985 and 1986?
2. What were the arguments during the 1930s for (a) Regulation Q interest-rate ceilings, (b) the separation of commercial banking and investment banking, and (c) the provision of deposit insurance?
3. Outline the major provisions of the DIDMCA and discuss the problems which brought about the need for this legislation.
4. What was the Fed's "membership problem," and how did DIDMCA help to solve the problem?
5. Compare and contrast the money market mutual fund (MMMF) and the money market deposit account (MMDA).

6. What are nonbank banks and how do they contribute to the spread of interstate banking?
7. What is regional banking and why did it expand so rapidly during 1985–1986?
8. Discuss the S&L industry's overall performance in the mid-1980s. Did deregulation help the industry? Explain.
9. What were the major provisions of the S&L Bailout Law of 1989?
10. Explain the term disintermediation. Given the major changes that have taken place in regulations, could disintermediation ever be a problem again? Why?

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6

GOVERNMENT REGULATION
WHY THE CONTROVERSY?

A large network of federal regulatory programs influence the economic activities of production, distribution, and consumption in the United States. Although some types of regulation date back to colonial times, the extent and form of government regulations today are unprecedented. Over time, government regulation has become more necessary as our economy has grown in both size and complexity. In recent years, however, the areas of economic activity and the extent to which the public sector should intervene have become controversial issues. The fact that the federal government has used its regulatory functions to assist the private sector in attaining socially desirable ends that cannot be achieved in the marketplace has also fueled the fires of debate.

The controversy focuses on the question of whether the ultimate gains from regulation are exceeded by the costs imposed upon society from such regulation. Critics contend that the "heavy hand" of government has replaced the "invisible hand" of market competition in allocating resources and determining prices and incomes. With increased regulation, it is feared that losses in economic freedom will eventually lead to losses in personal freedom.

Regulatory reform was an important item on the political agenda in the 1970s and early 1980s. During this period, transportation, communication, energy, and financial industries underwent extensive deregulation. But broad regulatory reform is now absent from political debate. Instead, increased concern is being registered in Congress over the need to strengthen regulations in such specific areas as environmental protection, stock and commodity exchanges, banking, and airline transportation.

This chapter will limit its scope primarily to regulation by federal agencies and its impact on our economy. It must be recognized, of course, that state and local governments engage in regulatory activities. States and localities impose additional layers of regulation on those enforced by the federal government. They also regulate many activities ignored by the federal government. Subsequent to examining the broad aspects of federal regulation, this chapter will focus on the workings of the deregulated airline industry. Deregulated as part of broad regulatory reform, the airline industry is now under congressional scrutiny and perhaps will be regulated once again as profits and fares surge.

JUSTIFYING REGULATION

The reasons for government regulation are many. Historical, political, and social factors, as well as economic ones, all loom large in explaining the demand for regulation. Among the reasons used to justify government regulation are monopolies, excessive competition, discriminatory pricing, cream skimming, consumer and worker information, and ill-defined property rights.

Natural Monopoly

A natural monopoly is a monopoly that emerges because of economies of scale. The size of the market is such that there is room for only one optimal-size firm. Since heavy fixed costs are associated with such capital-intensive firms, the long-run average cost per unit of output falls dramatically with expanded production. The first firm to establish sufficient output to achieve very low production costs could drive out competing firms with higher costs, leaving a monopoly situation. The cost structure of the monopoly industry, therefore, serves as a barrier to entry. The unregulated monopoly may be in a position to charge excessive prices, restrict output, and reap monopoly profits. Thus, the government awards monopoly franchises to such firms, protecting them from competition. In return for monopoly privileges, the government regulates services, prices, and profits. The natural-monopoly argument has been used by Congress to justify regulation of many regulated industries. In fact, however, cases of natural monopoly are few, with public utilities being the major example.

Excessive Competition

A more common justification for industry regulation is to prevent excessive competition. In this case, the government maintains at least several competitors, and often a relatively large number, but again regulates pricing, service, and additional entry. Unlike natural monopolies, these industries usually have cost structures based largely on variable rather than fixed costs. This type of structure allows small producers relatively easy entry into and exit from the industry. Wide swings in industry output and great instability in prices and profits in both the short and the long run often result. Such conditions create a maximum of uncertainty for producers and consumers. The case for government regulation often rests on the presence of excessive competition rather than excessive monopoly power. Regulation is justified to provide industry-wide stability. For example, problems stemming from unregulated competition in the trucking industry led to regulated competition with the passage of the Motor Carrier Act of 1935.

Discriminatory Pricing

A third justification for government regulation is to prevent injurious discriminatory pricing. Firms that have a very high ratio of fixed to variable costs can increase profits by charging markedly different prices for the same product in separated markets. For example, a firm possessing strong monopoly power could charge a lower price to those customers who had very elastic demands while charging a higher price to customers with less elastic demands. In order to be classified as discriminatory pricing, the different prices cannot be justified by differences in the cost of service. The result of discriminatory pricing can be a misallocation of resources and can cause serious competitive injury to customers in less elastic markets. The original justification for federal regulation of railroad rates was the railroads' blatantly discriminatory pricing structure, as well as their monopoly power. By regulating maximum rates for the benefit of customers and minimum rates for the benefit of railroads, the Interstate Commerce Commission (ICC) noticeably lessened discriminatory pricing and eliminated "ruinous" competition between railroads.

Cream Skimming

Another justification for government regulation is the perceived need to prevent destructive cream skimming in industries that are already regulated. Advocates of this sort of regulation argue that industries regulated as natural monopolies must be protected from unrestricted entry. Otherwise, new firms would select only the most lucrative markets to enter (the cream), leaving the established regulated producers the burden of continuing service to unprofitable or only marginally profitable markets. Regulations to restrict cream skimming depend on "cross-subsidizing" different markets. That is, in order

to provide an interlocking network of reasonably priced service, regulated industries are permitted to charge prices well above costs in markets with large sales in order to offset losses in poorer, smaller, or geographically separated markets. The monopoly protection awarded to these industries allows them to engage in a form of discriminatory pricing deemed to be in the public's best interest. But if new firms were permitted unrestricted entry into the high-priced cream markets, prices and profits would fall, and regulated firms would no longer have the financial wherewithal to continue service to lesser markets, resulting in elimination of service to large segments of the country. The need to maintain service to smaller markets is the justification for regulations that limit entry into such fields as postal delivery, trucking, airline transportation, and telephone service.

Consumer and Worker Information

One more justification for government regulation is the perceived need to provide better information to consumers and workers. A form of social intervention, such regulation assumes that consumers are, for a variety of reasons, unable to judge product quality in advance of purchase. This assumption has led, in turn, to direct regulation in the form of minimum product specifications and standards of safety or cleanliness. Because the costs of obtaining reliable product information from individual consumers would be high, and the information gathered would be difficult to disseminate, the government intervenes to improve the flow of product information. Regulations seek to protect consumers from a wide variety of unsafe or ineffective products as well as misinformation stemming from fraudulent advertising. The same rationale has been used by the government to justify intervention to protect workers from unsafe working conditions in factories, mines, and offices and on construction sites. The difficulty individuals have in obtaining reliable information is also responsible for the use of licensing as a means of assuring quality of service before purchase. Examples include barbers, beauticians, plumbers, and realtors. The effect of such licensing, and in many cases the primary reason for its advocation, is to restrict competition by increasing barriers to entry.

Ill-Defined Property Rights

One remaining justification for government regulation concerns the problem of allocating ill-defined property rights. The workings of a market economy are predicated on recognizable private property rights. But where property rights are unassigned or indefinite, anyone can use the property without paying for it as long as no one else is using it. The resulting social costs may be greater than the private costs because users are likely to overuse the property. In communications, for example, the use of airwaves constitutes an ill-defined

property right. In the absence of regulation, airwaves would be a free, although not unlimited, resource. By assigning rights to airwaves, the government prevents overuse and provides for an orderly system of communication. Ill-defined property rights also justify environmental regulation because air and water are common property. However, because property boundaries are usually difficult to identify and divide in environmental areas of concern, the government has enacted a variety of regulatory schemes in addition to assigning property rights.

The justifications for government regulation are many, but whatever the original rationale, there is no doubt that regulation has become more rigid over time and has bred even greater regulation. This development is not surprising because our increasingly complex, technologically advanced economy creates demands for regulatory controls to handle problems that did not exist in simpler times.

GROWTH OF REGULATION

For most of the nineteenth century, the U.S. economy was without much direct federal regulation. The industrial structure prior to the Civil War mainly consisted of small business firms owned on a partnership or proprietorship basis, and the spirit of laissez-faire thrived. With the end of the Civil War, however, the economic scene began to change as the age of big business was ushered in. As predatory business practices on the part of big business became more widespread, the call for government intervention on the part of small businesses, farmers, and consumers was inevitable.

Railroads were the first industry to be regulated. The use of discriminatory pricing and other techniques associated with the possession and use of monopoly power drove the public, particularly farm communities dependent upon rail service, to seek protection. In 1887 the Interstate Commerce Commission (ICC) was created to regulate railroads. The task of the ICC was to determine railroad rates, stabilize profits, and set standards for service. The ICC sought to (1) protect railroads from themselves by stopping excessive competition and (2) protect the public from railroad abuses of monopoly power.

Other industrial firms were also growing rapidly. Many had attained a large size by acquiring other firms or by forming trust organizations for the purpose of restraining trade and monopolizing markets. During the 1880s the great trusts attracted the nation's attention. The most noteworthy of the trusts were the Cotton Trust, Whiskey Trust, Lead Trust, Sugar Trust, Tobacco Trust, and—the most famous of all—the Standard Oil Trust. Again the clamor of the public against such near-monopolies resulted in the passage of federal legislation. In 1890 Congress passed the Sherman Antitrust Act, which outlawed contracts and activities designed to create monopolies in restraint of interstate commerce. In dealing with trusts, the government's approach was to break

them up into smaller units and rely on market competition to protect consumers. In the case of railroads, the government allowed monopolies to continue but controlled their prices and policies.

The early advocates of government intervention primarily wanted the public sector to check the rise of monopoly power and restore market competition wherever possible. As additional areas in which the market outcome was judged unsatisfactory drew public attention, offended parties again requested federal intervention, and thus the scope of economic regulation expanded. In succeeding years, Congress amended transportation and antitrust statutes, and direct economic regulation spread to other industries, including agriculture, banking, communications, and energy.

By the end of the 1930s, a total of 24 federal regulatory agencies had been legislated into existence, ten of which were established between 1930 and 1939. The policies of these agencies were largely concerned with economics and the orderly functioning of specific industries. They constitute what econ-

TABLE 6-1

Important Economic Regulatory Agencies

Date	Agency	Functions
1887	Interstate Commerce Commission	Regulates rates and routes of railroads, most truckers, and some inland-waterway carriers
1890	Antitrust Division of the Department of Justice	Regulates interstate commerce, prohibits monopolization and restraint of trade
1913	Federal Reserve Board	Regulates member banks and sets money and credit policy
1914	Federal Trade Commission Act	Regulates trade to prevent unfair competitive practices
1930	Federal Energy Regulatory Commission	Regulates interstate transmission of electric power, natural-gas-pipeline rates, and wellhead prices of interstate gas
1931	Food and Drug Administration	Regulates drugs for safety and effectiveness, food for safety and purity, and labeling
1934	Federal Communications Commission	Centralizes regulation of broadcasting, telephone, and telegraph
1934	Securities and Exchange Commission	Regulates securities markets and public disclosures of company information.
1935	National Labor Relations Board	Regulates labor-management practices and conducts union elections

omists now refer to as examples of *economic regulation*. Table 6-1 lists some of the important economic regulatory agencies, along with their functions. The list is not exhaustive, but rather includes those agencies that are considered the most powerful and pervasive in their influence.

Subsequent to 1939, the number of federal regulatory agencies grew somewhat modestly until the 1960s, when seven more were created. In the 1970s, however, a dramatic increase in the number of agencies occurred; with the creation of 21 new agencies and two others that were offshoots of an existing agency.

The more recent formation of agencies represents a shift in the philosophy and approach of federal regulation. The older regulatory bodies sought to control entry, pricing, and service in defined markets; the newer agencies specialize in socioeconomic problems. For this reason, the term *social regulation* has been applied to the regulatory activities of agencies that seek to correct a variety of undesirable by-products of the production and use of goods and services. Table 6-2 contains a list of major agencies engaged in social regulation, with brief descriptions of their functions.

The creation of these newer regulatory agencies occurred in response to increasing pressures to provide solutions to a number of problems, such as equal opportunity for minorities, equal treatment of the sexes, protection of the environment, protection of workers from occupational hazards, protection of consumers from shoddy merchandise, and other side-effects of normal economic activity that the market often ignores. Many of these problems had been in existence for a long time, but only recently did the public choose to

TABLE 6-2

Important Social Regulatory Agencies

Date	Agency	Functions
1965	Equal Employment Opportunity Commission	Handles complaints of employment discrimination based on sex, race, and religion
1970	National Highway Traffic Safety Administration	Sets standards for motor vehicle safety and fuel economy
1970	Environmental Protection Agency	Regulates standards and timetables for pollution abatement
1970	Occupational Safety and Health Administration	Regulates safety and health conditions in work places
1972	Consumer Product Safety Commission	Regulates standards for product safety and hazardous substances
1973	Mine Safety and Health Administration	Regulates safety in mines
1975	Nuclear Regulatory Commission	Regulates civilian nuclear safety, including power plant licensing

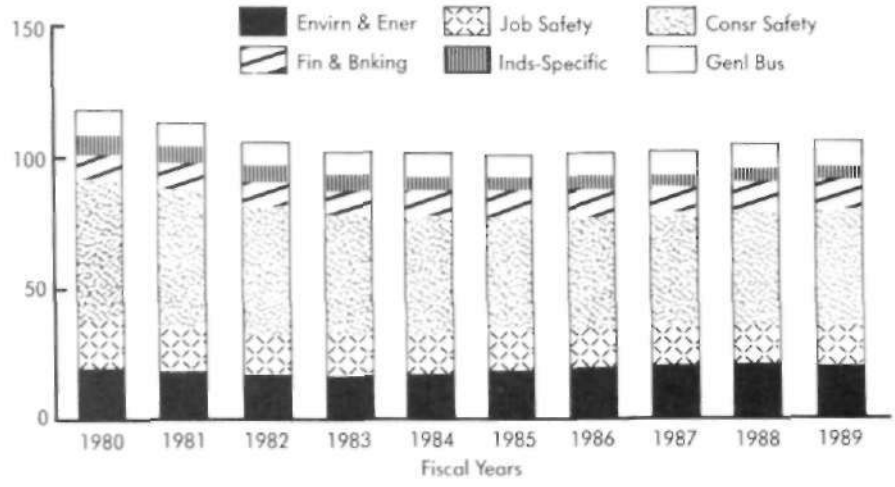
address them by pressing for regulatory programs designed to override the market system.

The controversial nature of these newer agencies stems from the fact that their actions affect not only the conditions under which goods and services are produced but also the characteristics of the products themselves. As a result, the private-market sector has to factor additional social values into its decision-making process. Federal regulation is no longer restricted to certain industries or to exercising certain powers over the national economy. It has also become involved in the day-to-day operations of a wide range of industries. As of fiscal 1989, a total of 51 major federal regulatory agencies existed.

Another way of measuring the size of federal regulatory agencies is by examining the number of full-time workers they employ. Figure 6-1 presents the trend in regulatory staffing for fiscal years 1980–1989. The peak year for staffing occurred during fiscal year 1980, when 118,000 were employed by all agencies. A reversal of the trend toward increased staffing occurred during the Reagan years. Staffing levels plateaued in 1983 and remained virtually flat through 1987, with the lowest employment level of 100,000 occurring in 1985. In fiscal 1989, the Center for the Study of American Business estimated that agency employment increased to a level of 106,000.

FIGURE 6-1

Trends in Regulatory Staffing
(Thousands)



SOURCE: Center for the Study of American Business, Washington University. Derived from the Budget of the United States Government and related documents (various fiscal years).

Table 6-3 shows staffing levels for selected years by area of regulation. Both social and economic regulatory agencies experienced reductions in employment during the 1980–1983 period, with the notable exception of the environment and energy areas. On the other hand, economic regulatory agencies show an increase of 1.3 percent over the same period. The largest increase in the economic regulation category came in finance and banking. The difficulties confronting the savings and loan industry and Wall Street investment firms account for much of this increase in staffing.

COSTS OF GOVERNMENT REGULATION

With the increased awareness of the rapid expansion of regulatory activities in our economy, serious attention is now being directed to measuring the full costs of regulation. The task of constructing reliable cost data is not easy.

TABLE 6-3

Staffing for Federal Regulatory Activities
(Permanent full-time positions)

Area of Regulation	1980	1983	1989[a]	Annual % Change 1980-1983	Annual % Change 1983-1989[a]
SOCIAL REGULATION					
Consumer safety and health	53,720	45,469	44,617	–5.1%	–0.3%
Job safety and other working conditions	18,201	15,849	15,044	–4.3%	–0.8%
Environment and energy	19,621	15,526	20,608	–5.3%	–4.1%
TOTAL	91,542	77,844	80,269	–5.0%	0.5%
ECONOMIC REGULATION					
Finance and banking	9,681	9,386	11,190	–1.0%	3.2%
Industry-specific regulation	7,365	5,921	4,973	–6.5%	–2.7%
General business	9,390	8,737	9,763	–2.3%	2.0%
TOTAL	26,436	24,044	25,926	–3.0%	1.3%
GRAND TOTAL	117,978	101,888	106,195	–4.5%	0.7%

[a]Estimated.

SOURCE: Center for the Study of American Business, Washington University. Derived from the Budget of the United States Government and related documents (various fiscal years).

Unlike the costs of providing public goods largely financed by tax revenues, the bulk of regulatory costs lie outside the administrative budgetary process. Most of the costs attributable to federal regulation are hidden because they are accounted for by higher prices paid by consumers or in lower returns to owners and shareholders. Still, these two types of hidden costs are as important as those included in the normal budgetary process, because both have the effect of allocating scarce economic resources that are capable of alternative uses in the private sector. Given the present paucity of cost information, it appears that regulation has expanded with but minimal scrutiny as to its aggregate cost.

In response to the need for improved data on the cost of regulation, various government agencies, business firms, universities, and research institutions have recently undertaken a number of studies. Cost estimates of regulation presented in this chapter are drawn from the results of several such studies.

ADMINISTRATIVE COSTS

Because costs associated with federal regulation arise in different ways, it is necessary to separate them into different categories. Expenditures for federal regulatory activities as shown in the federal budget are used as a measure of the "administrative" costs shown in Table 6-4. Included are the costs of agency staffing, office supplies, and consultants' reports needed to write, manage, publish, and enforce regulations, along with other operating cost items. In current dollars, administrative costs increased from $6.2 billion in 1980 to 10.1 billion in 1989.

Figure 6-2 indicates that in constant 1982 dollars, spending for social regulation declined by 4.6 percent a year during the years 1980–1983, and spending for economic regulation decreased by 1.9 percent per year. From 1983 through 1989, annual increases in real spending have averaged nearly 4 percent. The Environmental Protection Agency has recorded the largest gain among social regulatory agencies with nearly an 8-percent annual increase. Although industry-specific regulation commands fewer and fewer resources, finance and banking increased by 8 percent per year during the 1983–1989 period, and general business increased 5 percent a year.

At a time when economists report figures for various economic activities in terms of hundreds of billions, and even trillions, of dollars, a sum of $10.1 billion for administering the regulatory arm of the federal government may seem relatively small. To some, a $10.1 billion price tag appears to be a bargain price to pay for the undisputed benefits of a cleaner environment, safer work place, product standards, and economic fair play. However, the full cost of regulation to the economy is much greater than that attributable to administration alone. To calculate the full cost, one must also include compliance costs and indirect costs.

TABLE 6-4

Administrative Costs of Federal Regulatory Activities in Current Dollars
(Fiscal years, millions of dollars)

Area of Regulation	1980	1983	1986	(Est.) 1989
SOCIAL REGULATION				
Consumer safety and health	$2,307	$2,441	$2,632	$3,044
Job safety and other working conditions	753	807	823	976
Environment and energy	2,201	2,260	2,793	4,314
TOTAL	$5,261	$5,508	$6,248	$8,334
ECONOMIC REGULATION				
Finance and banking	$362	$415	$890	$804
Industry-specific regulation	279	285	270	307
General business	354	435	528	701
TOTAL	$995	$1,135	$1,688	$1,812
GRAND TOTAL	$6,256	$6,643	$7,936	$10,146

SOURCE: Center for the Study of American Business, Washington University. Derived from the Budget of the United Stated Government and related documents (various fiscal years).

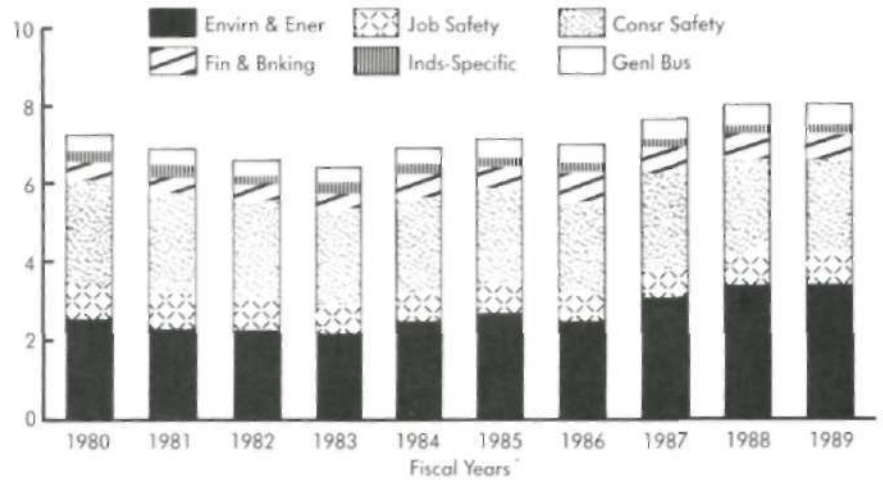
Compliance Costs

Compliance costs comprise expenditures incurred by business firms and state and local governments in complying with government regulations. In general, compliance costs include the following:

- Expenses associated with examining various possible approaches for compliance and shaping proposed standards
- Expenses required to satisfy specific requirements established by regulations
- Expenses attributed to collecting data and maintaining records indicating conformance with standards
- Expenses necessary to defend compliance efforts against legal challenges

FIGURE 6-2

Trends in Regulatory Spending
(In billions of 1982 dollars)



SOURCE: Center for the Study of American Business, Washington University. Derived from the Budget of the United States Government and related documents (fiscal years 1981 and 1987).

Viewed in a more simplistic way, compliance costs are direct outlays that would not take place in the absence of government regulation.

Attempts to precisely measure the full extent of compliance costs are obviously fraught with insurmountable difficulties. At best, any measure of compliance costs can be presented only as a crude estimate. According to data published by the Center for the Study of American Business, the economy-wide impact of complying with government regulations was approximately $120 billion in 1980. Again, it must be remembered that compliance costs are largely financed through higher prices to consumers.

Indirect Costs

Government regulation indirectly affects our economy in a variety of complex ways; but several broad generalizations can be made about its impact on productivity and innovation. For more information on indirect costs, see Chapter 3.

Productivity. Government regulation decreases productivity when resources are allocated away from the production of measurable output, such as

autos, food, or petroleum, and into nonmeasurable goods, such as cleaner air, cleaner water, or increased job safety. Economic resources directed to achieving these social goals cause a measurable loss in productivity in terms of national income statistics. However, the loss is largely the result of an inability to quantify in dollar terms the value of social benefits derived. In itself, therefore, this loss should not constitute a major matter of concern. But in those industries where complying with government requirements necessitates greater resource costs than resulting social benefits, national productivity is reduced, in both a measured and a nonmeasured sense. This reduction in productivity also occurs where government regulation requires the use of a larger number of costly resources than necessary to achieve stipulated social goals.

In some cases economic regulations can bring about a direct decline in productivity. Trucking regulations mandated by the ICC, for example, traditionally required wasteful empty return trips and circuitous routing. In communications and finance, regulations had the effect of stifling innovations such as cable television and electronic banking.

Innovations. The flow of innovations is of critical importance in a market economy. Innovations create jobs, increase productivity, and shape the overall quality of the economy. Along with numerous other factors, government regulations have served to shift many research activities away from projects producing possible major innovative breakthroughs. In the capital-goods sector, rather than engaging in new experiments involving new approaches to problems, American industry has felt compelled to stick with older technology. The automobile industry, for example, is still wedded to the internal-combustion engine and controlling air pollution instead of developing more efficient and cleaner engines. In consumer industries, major innovative research is secondary to market-oriented research focusing on product differentiation. In today's climate, the introduction of another brand of frozen pizza offers greater potential payoffs at less risk than does a synthetic meat product.

Capital investment in many industries today requires lengthy time delays brought about by numerous permit applications, as well as uncertainties about future regulatory requirements. For example, it required about nine years of hearings, proposals, and comments to decide whether a product labeled peanut butter should contain 90- or 92-percent peanuts.[1]

DEREGULATION OF AIRLINES

Whereas regulatory reform in the area of social regulation is likely to emphasize greater flexibility and more cost effectiveness, regulatory reform in the area of economic regulation has become identified with deregulation. In some

1. The Center for the Study of American Business.

industries the process of deregulation is already underway. In recent years, various degrees of deregulation have taken place in the communications, finance, and transportation industries. In order to gain an insight into the problems associated with deregulating an industry, an examination of the domestic airline industry should prove helpful.

CAB Regulation

Economic regulation of the airline industry dates back to 1938 with the creation of the Civil Aeronautics Board (CAB). The stated objectives of the CAB were to insure adequate, economical, and efficient air service at reasonable charges. By the end of World War II, the CAB had developed two lines of policy to achieve these objectives. It acted to control entry and exit of domestic trunk lines to prevent excessive competition, and it supervised airfares to protect the public. Although considered effective in the airline industry's formative years, by 1970 vocal critics of the agency charged that its policies had the effect of reducing efficiency, discouraging innovations in service, raising prices, and causing a severe misallocation of resources.

Under CAB regulation, airlines were prohibited from engaging in competitive pricing. Consequently, airlines were compelled to compete vigorously on the basis of customer service. Costly service competition in many cases resulted from the CAB setting prices above marginal costs. Economic theory tells us that in highly competitive, nonregulated markets, prices above marginal costs will not be sustained, for price competition among existing firms, as well as the entry of new ones, will drive prices down to the level of marginal costs. However, the CAB not only prevented price cutting but also restricted entry of new carriers. Therefore, airlines sought to increase their market shares by the only viable alternative: nonprice competition.

The most injurious form of service competition entailed flight scheduling in heavily trafficked markets. Individual airlines sought consumer identification by providing the largest number of daily flights between major cities so that customers would contact that airline first in making reservations to any destination. Many of these flights were duplicative since passengers carried on these flights could have been accommodated easily by fewer flights. The resulting proliferation of flights created a chronic problem of excess capacity on these routes.

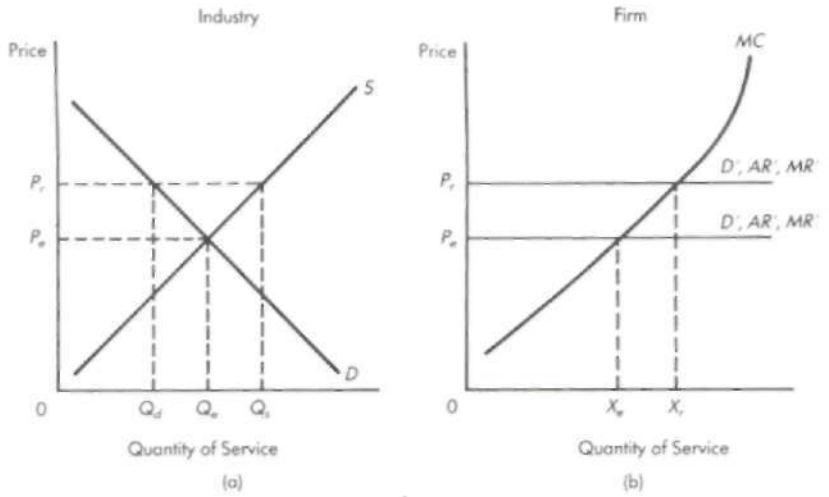
To understand the economic incentive to engage in costly service competition, it is useful to consider the workings of a purely competitive market. Of course, even in the most fiercely competitive markets, the airline industry does not approximate pure competition. In fact, although heavily trafficked markets are dominated by a few large carriers, elsewhere consumers are often faced with monopoly service. But pure competition provides an analytical framework for understanding company behavior, as the airline industry does possess many of the characteristics of effective competition—fairly elastic

consumer demand, few economies of scale, and essentially homogeneous service, among others.

Figure 6-3 contains two panels portraying ticket prices and quantity of service for an individual airline and for the industry as a whole. Assume the market in question is the transcontinental route between New York City and Los Angeles, a route characterized by vigorous competition among carriers. Panel (a) represents the short-run market demand and market supply functions for airline service between the two cities. The equilibrium price of P_e is the market clearing price determined by supply and demand forces in an unregulated market, resulting in quantity of service Q_e. For the individual airline shown in panel (b), the quantity of passenger service offered at the price of P_e is X_e. Since the firm in a competitive market structure is a price taker, rather than a price maker, the firm's demand curve, as well as its marginal revenue and average revenue curves, is the horizontal line at price P_e. Its marginal cost curve (MC) is the short-run supply curve and, as a profit maximizer, the firm would equate marginal cost with marginal revenue.[2] This results in an equilibrium position whereby price (and thus marginal revenue) equals marginal cost.

FIGURE 6-3

Pricing and Quantity of Service in the Airline Industry



2. Note that under conditions of pure competition, the short-run marginal cost curve is the firm's short-run supply curve only at points above the firm's average variable cost curve.

Instead, assume the CAB has set the price of air service between New York and Los Angeles at P_r, a price well above the market clearing price of P_e. Panel (a) indicates that the regulated price results in an excess supply of airline service, for the higher price has encouraged consumers to fly less while encouraging airlines to expand the amount of service offered. Why? Panel (b) shows that an individual airline faced with a price of P_r will adjust output accordingly. Acting rationally, an airline will expand service until its marginal cost curve intersects the higher regulated price. The new equilibrium quantity of service is now X_r. Because each firm behaves in the same fashion, excess capacity of Q_s minus Q_d results in the marketplace. The point to be stressed is that if price is prevented from falling to marginal cost in the short run, then, where healthy competition exists, airlines will tend to increase service to equate marginal cost with the higher price.

The problem of excess capacity in the airline industry tended to be chronic because the law did not allow the CAB to regulate frequency of service. The deadweight loss to society of supplying excess service at higher fares was undoubtedly substantial. To compound the problem, airlines also competed heavily in other areas of costly nonprice competition. Over the years, airlines sought to attract passengers by providing greater comfort, better first-run movies, and more exotic food and drinks than competitors. Even macadamia nuts were substituted for peanuts in the attempt to differentiate service. Such attempts to differentiate service also tended to increase the costs of providing it. The feeling that the airline industry and the general public could be better served by less regulation, rather than more, became widespread during the 1970s.

The Move to Deregulation

Prior to 1976, the CAB had experimented with allowing airlines greater price flexibility, but on a relatively small scale by permitting the introduction of family fares, night fares, standby fares, and youth fares, among others. In 1976, the CAB took an additional step by sanctioning super-saver fares, no-frill fares, and unlimited travel fares. The agency granted special fare reductions of this sort in recognition that the demand for air travel on the part of many customers was far more elastic than had been assumed. In constructing airfares, the board had traditionally assumed a demand elasticity of less than one for all traffic. The success of special fares, although highly restrictive, complex, and discriminatory, was a major factor persuading the CAB to call for widespread deregulation of the industry.

In 1978, Congress passed the Airline Deregulation Act. The law called for an end to all price and route controls by 1983, as well as the termination of the CAB itself in 1985. In the interim, airlines could reduce fares by as much as 50 percent or raise them by as much as 5 percent without CAB approval.

Deregulation was not received with universal enthusiasm. Some of the major airlines vigorously opposed it. Of major concern was the possible abandonment of some markets, particularly smaller ones. Opponents to deregulation argued that increased competition in high-density markets would eliminate excess profits used to cross-subsidize service in low-density markets. Without these profits, a reduction or even elimination of service to many communities was feared inevitable. The CAB, however, presented several counter-arguments. First, even under a regulated framework, airline service to many smaller communities was declining. Second, the CAB pointed to a large number of smaller markets that airlines could have withdrawn from but did not. Although fares for passenger service to and from these markets did not in many cases cover fully-allocated costs, they did cover marginal costs and contribute to overhead expenses. From an airline's perspective, these markets would still be worth servicing. Third, the CAB found very little evidence to support the cross-subsidy argument. Many smaller markets were confronted with very high airfares, while in other cases low fares went hand in hand with poor service. Finally, the CAB argued that where regulated carriers withdrew from markets, they would undoubtedly be replaced by commuter and regional airlines providing equivalent if not better service.

Another issue was whether deregulation would result in increased concentration in the industry. Critics contended that in a few short years the number of firms in the airline industry could easily shrink to half the present number. The CAB responded by admitting that some increase in concentration was likely to occur in the future, but that the pressure for merger activity had existed for many years and was not new. If increased concentration occured with deregulation, it would be largely the result of inefficient management. Large airlines possess no significant cost advantages over small airlines from the standpoint of economies of scale. Both small and large airlines can acquire larger aircraft to gain lower costs per seat mile. In fact, bigness breeds inefficiency because the airline business is a personal-service, consumer-oriented one. Finally, as long as entry into markets remains open, the monopoly power that may result from merger activity can be checked by additional entrants.

A third point of controversy was the possibility of chaotic market conditions resulting from deregulation. Without CAB regulation, the argument went, airlines would rush into some markets while abandoning others, engage in price wars, and bring about destructive competition. A maximum of uncertainty would result, with passengers not knowing from day to day which airlines fly which routes and at what fares. The public would also experience difficulty making reservations and would be more reluctant to make long-run travel plans. In short, the adjustment process would create such trauma in the industry that the market would not function. The CAB's view was that most markets are unregulated and function without chaos, so why not airlines?

Early Effects of Deregulation

As predicted, the deregulation of the airline industry unleashed previously constrained market forces that quickly affected both airlines and consumers. With the elimination of barriers to entry, existing airlines reduced or even eliminated service to some cities while at the same time initiating it in markets from which they formerly had been precluded by regulation. A number of new airlines were formed, and some of these provided service to smaller communities. Others entered into direct competition with established trunk-line carriers in major markets. In all, 72 new airlines were created from 1978 through 1986.

With the increased mobility of existing airlines and the entry of new firms into the industry, intense price competition was inevitable. Downward pressure on airfares was exacerbated by the entry of cut-rate carriers, such as People Express, as well as the decision on the part of several existing carriers, such as Braniff, Frontier and Continental, to become exclusively discount-fare airlines. Introductory low-fare service was also prevalent wherever major trunk carriers, such as American, Delta, or United, entered new markets. On long-haul flights, aggressive price cutting occurred as airlines sought to deal with excess capacity resulting from CAB regulation. Competition served to keep a lid on price increases, and discount fares had become so widespread and accessible that by 1986 over 90 percent of all paying passengers were flown at a discount. Lower prices necessitated lower costs and existing carriers slashed labor costs wherever feasible.

Passenger demand proved responsive to lower fares. Prior to deregulation, 17 million Americans took a yearly average of two trips each. The total number of passengers in the U.S. has risen from 292 million on 14.7 million commercial flights in 1982 to an estimated 450 million on 20 million commercial flights in 1989. On major carrier routes, load factors increased from 56 to 64 percent, largely as a result of reduced fares and better assignment of airplanes. In smaller markets, passengers experienced an increase in the quality of service and in many cases an increase in the number of flights as well. Deregulation proved quite successful during the early years. The number of airlines increased, ticket prices decreased, and passenger service, although erratic, was acceptable. However, significant and predictable changes occurred in the industry that resulted in less competition and stronger market control by fewer airlines.

MARKET CONCENTRATION

Faced with a deregulated industry, major carriers quickly moved to increase their hold on passenger traffic by initiating actions that had the effect of strengthening their market power and reducing competition. Large airlines introduced frequent-flyer programs, implemented sophisticated automated

reservation systems, increased their control of airport resources, and developed a traffic pattern based on a hub-and-spoke system.

Frequent-Flyer Programs. Frequent-flyer programs were established during the 1980s as a means of instilling passenger loyalty to a given airline. In many ways, frequent-flyer programs are to airlines what trading stamps were to gasoline stations in the 1960s. Frequent-flyer programs cater to the business traveler by offering rewards for repeated travel on a given airline. After a designated number of trips, the frequent flyer is eligible for free airline tickets, not only to domestic locations, but to destinations in many parts of the world. In addition to free airline tickets, awards also include free hotel stays and free use of rental cars.

By creating incentives to repeatedly fly on one airline, frequent-flyer programs make it difficult for new entrants to enter a given market. They have proven themselves to be very effective marketing tools with which to capture passenger traffic and increase market concentration. Also, because most frequent flyers are business travelers, their demand for service is highly inelastic. Because their fares are normally paid for by employers, they are less responsive to lower fares. With inelastic demand, the high-profit segment of the airline industry is strengthened.

Automated Reservation Systems. The automated reservation system has provided several major airlines with a powerful tool to reduce competition. Automated reservation systems are vast computer networks that large carriers, such as United and American, use to provide up-to-date flight information to travel agents. Each day, hundreds of thousands of fares change in the airline industry, which high speed computers can constantly update to assist travelers in purchasing tickets and to enable airlines to allocate seats.

The travel industry has come to rely not only on automated reservation systems, but on the airlines that own them as well. It is estimated that nearly 90 percent of all flights are now booked through carriers with computerized networks. American Airlines has the largest system and is used by approximately 14,000 agencies to track some 45 million fares. In 1988, this system produced profits for American Airlines in excess of $100 million.

Critics claim that airlines employ their automated reservation systems to effectively reduce competition. The Department of Transportation has charged that American and United provided more prominent information for their own flights than for competing carriers. It also charged that airline-owned automated reservation systems earn profits greater than those that would be expected in a competitive market. In addition, the automated reservation system creates a barrier to entry, for should competitors enter a market, airlines owning the computer reservation system charge a booking fee for each ticket purchased. This has the effect of raising a new competitor's cost relative to such airlines as American and United. Consequently, booking fees can reduce prospects for a profitable entry.

Control of Airport Resources. Limited airport resources constitute a significant barrier to entry for airlines seeking to establish new service. The two most important airport resources are gate space and takeoff and landing slots. Existing airlines have negotiated long-time leases with airports that serve to lock airlines into providing service to the market. With long-term leases already existing on most if not all gate space, new entrants are impeded from securing a foothold in the market and existing smaller carriers find it difficult to expand service. The market value of gate space to airlines is evident whenever an ailing airline seeks to leave a given market. In 1989, USAir offered $85 million for eight gates belonging to Eastern Airlines in Philadelphia. If approved, USAir would have controlled 23 of the airport's 49 gates. When combined with its control of 36 of the 51 gates in Pittsburgh, USAir would have dominated air traffic in Pennsylvania.[3]

Takeoff and landing slots are also sources of barriers to entry. These slots are usually allocated by administrative decision. At four major airports—O'Hare (Chicago), National (Washington), La Guardia (New York), and Hartsfield (Atlanta)—these slots can be bought and sold at market price. Only under a market system can potential entrants find easier access to provide service in major markets.

Hub-and-Spoke Systems. One of the most radical changes brought about by deregulation is the manner in which airlines have restructured service in order to increase market share. Whereas airlines used to fly mostly point-to-point between cities, they now operate by means of hub-and-spoke systems. Called hub and spoke because the new route systems look like spoked wheels, the system allows for increased service between smaller cities. Figure 6-4 portrays the workings of a typical hub-and-spoke system.

The hub-and-spoke system provides important advantages to both passengers and airlines. First, the system generates more service, allowing passengers to select flights closer to their preferred departure times. Second, travel time is reduced. Passengers departing from the hub are more easily able to fly nonstop to their destination, while passengers located in spoke cities are usually faced with no more than a change of planes at the hub. With this system, the need to change airlines is sharply reduced. It is now estimated that 98 percent of all passengers complete trips without changing airlines. Third, a major advantage to airlines from the hub-and-spoke systems is an increase in the average load factor, as measured by the percentage of seats sold on each flight. Greater load factors lower per-passenger costs to airlines and permit greater flexibility in determining fares.

There are disadvantages to the system as well. Passengers now experience long delays on a regular basis because of missed connections at hub airports.

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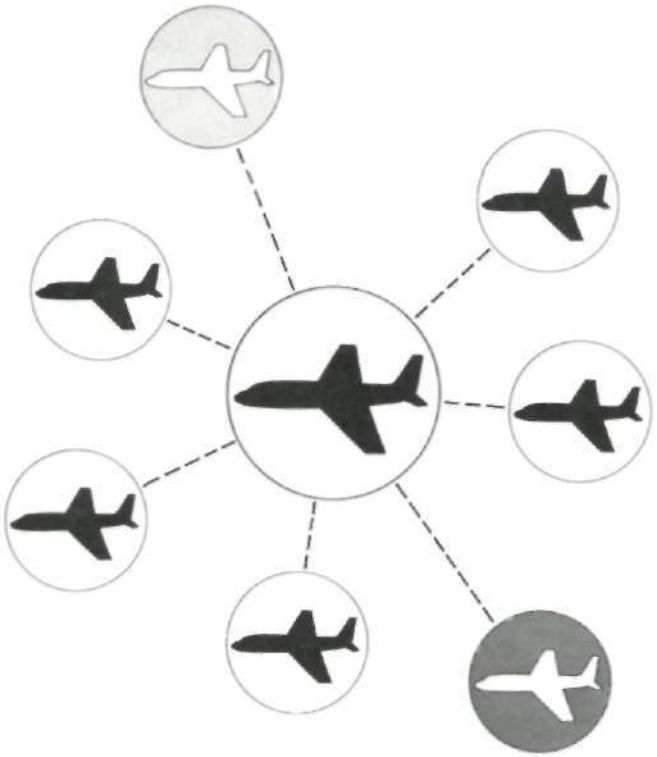
3. Midway Airlines purchased these gates from Eastern Airlines for $206 million with approval from the U.S. Justice Department.

FIGURE 6-4

Hub-and-Spoke Networks of Major Airlines



Note: Spoke flights may be those of the hub airline, a commuter airline owned by the hub airline, or an independent commuter airline with connecting flights.

With bad weather, the entire wheel comes apart. The system also places great pressure on airport facilities at peak hours, creating traffic overloads and concerns over possible mid-air collisions. Table 6-5 presents the hubbing locations of the 15 largest airlines.

THE INDUSTRY TODAY

Major carriers are now firmly entrenched in most large markets. The effective use of tactics to increase market share has lead to declining competition. With

the difficulty in securing departure gates and takeoff and landing slots, many airlines have disappeared from the industry. Included among those that have

TABLE 6-5

Hub Airports of Major Airlines
(1989)

ALASKA
Seattle
Anchorage

AMERICA WEST
Phoenix
Las Vegas

AMERICAN
Dallas/Fort Worth
Chicago (O'Hare)
Nashville
Raleigh-Durham
San Juan

BRANIFF
Kansas City
Orlando

CONTINENTAL
Houston (Intercontinental)
Denver
Newark
Cleveland
Honolulu
Guam

DELTA
Atlanta
Cincinnati
Salt Lake City
Los Angeles
Boston
Orlando
Dallas/Ft. Worth

EASTERN
Miami
Atlanta
Philadelphia
San Juan

MIDWAY
Chicago (Midway)

NORTHWEST
Minneapolis/St. Paul
Detroit
Memphis
Milwaukee

PAN AMERICAN
New York (JFK)
Miami
London
Frankfurt

SOUTHWEST
Dallas (Love Field)
Houston (Hobby)
Albuquerque
Phoenix

TWA
St. Louis
New York (JFK)

UNITED
Chicago (O'Hare)
Denver
Washington (Dulles)
San Francisco
Honolulu

USAIR
Charlotte
Pittsburgh
Philadelphia
Cleveland

[a]Primary hubs in bold.

vanished since 1978 are such established airlines as National, Western, Frontier, Ozark, Piedmont, and Republic. Most airlines that entered the industry after deregulation are now history, including People Express and New York Air. As a result, the airline industry is more concentrated than ever before.

Table 6-6 shows some of the major consolidations that have occurred during the 1980s. The shakeout, however, is not over. Eastern Airlines entered Chapter 11 bankruptcy in 1989 and may be merged with a stronger airline or sold off in parts to competitors. The future of Pan American and TWA is also uncertain. Although they both have strong international routes, their overall operations consistently produce large financial deficits.

As weaker airlines disappear, market share for the stronger carriers will continue to increase. Figure 6-5 shows that the five largest carriers have increased their market share to 70 percent of all revenue passenger miles. All of the five airlines were founded long before deregulation.

Along with the problem of increased concentration throughout the industry, concentration at hub airports is even more pronounced. The development of powerful hub-and-spoke systems has produced near-monopolies in some major cities. Figure 6-6 indicates the extent to which selected airports are dominated by the hubbing operations of major airlines. At Pittsburgh, for example, USAir's share of boarding traffic is now 83 percent. In other cities hub dominance was strengthened through merger activity. Northwest Airlines purchased Republic Airlines and now controls 78 percent of the boarding traffic in Minneapolis. St. Louis is virtually controlled by TWA, which acquired Ozark Airlines to increase its share of traffic to 82 percent. Not surprisingly, increased market control by dominant carriers has led to an upward movement in airfares.

In the first six months of 1989, ticket prices increased an average of more than 17 percent. Discount fares are no longer the great bargains they once were during the years of increasing competition. Not only are discount fares appre-

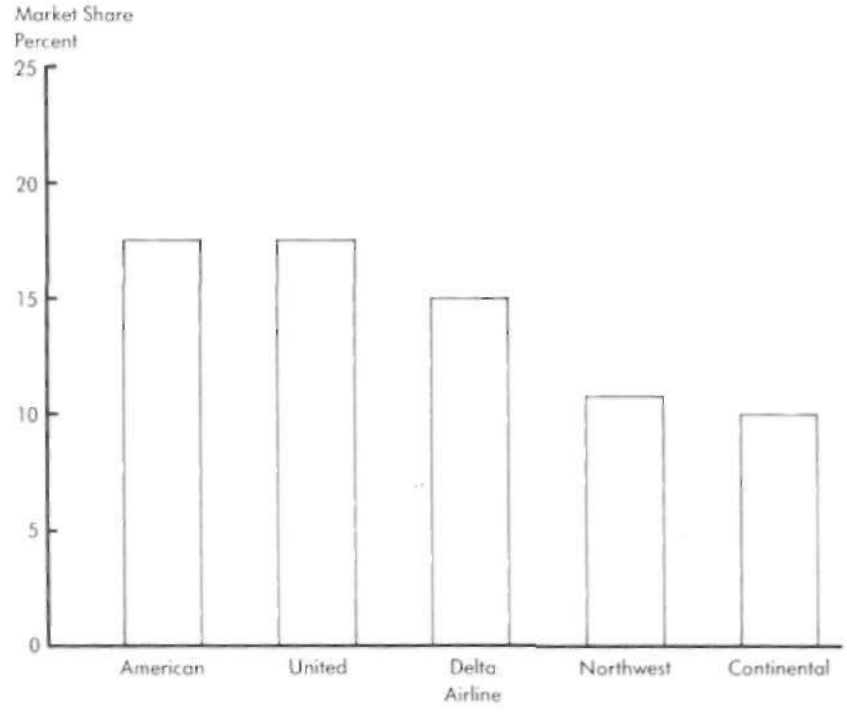
TABLE 6-6

Consolidations of Major Airlines

Airline	Acquired Airline(s)
Texas Air	Continental, Eastern, People Express, New York Air
United	Pan Am (Pacific routes only)
Northwest	Republic
Trans World Airline	Ozark
Delta	Western
American	Air California
USAir	Piedmont, Pacific Southwest

FIGURE 6-5

Market Share of Five Largest Domestic Airlines, January 1, 1989
(Revenue passenger miles)



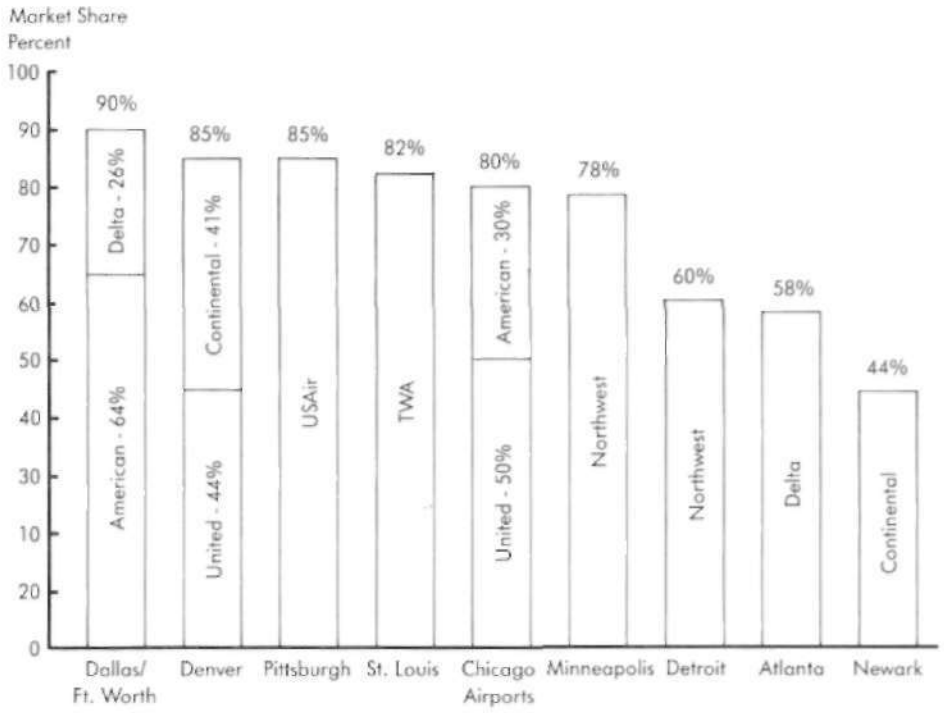
SOURCE: U.S. Department of Transportation.

ciably higher, but a greater number of restrictions apply. Fares for the business traveler have increased markedly.

The rise in ticket prices at hub airports has led to investigative studies by the federal government's General Accounting Office. In a 1989 report, the GAO indicated that at 38 airports not dominated by one or two carriers, airfares averaged 15 cents per mile. However, at 15 airports dominated by one or two carriers the GAO found that airfares averaged 27-percent more per passenger mile. Studies conducted by the Boeing Company produced evidence that dominant hub airlines charge originating passengers significantly higher prices for service than passengers passing through the hub. Since "through" passengers connecting at any given hub have more options than passengers originating a flight at a hub city, prices are lower on

FIGURE 6-6

Market Share of Passenger Boardings at Selected Hub Airports (January 1, 1989)



SOURCE: *Airline Economics* (various issues).

"through" flights. But whether traffic is connecting or originating, passengers are being subject to the price and service effects of a strong, deregulated oligopoly in the airline industry.

EXPANDING COMPETITION

Airline economists assert that one viable approach to promoting competition in the airline industry is to expand existing airports and construct new ones. With larger airports, smaller airlines and new entrants would have greater access to gate space and takeoff and landing slots.

Little doubt exists as to the need for expanded airport facilities. By the year 2000, passenger traffic is expected to total at least 750 million, some

67-percent higher than the 1989 estimate figure of 450 million. By that time, major traffic gridlocks will exist at airports throughout the country.

Although $8 billion worth of airport expansion is planned, only Denver, Colorado and Austin, Texas are planning to construct entirely new airports. Denver's facility is expected to be completed by 1993 at a cost of $2.3 billion. Among the many opponents of Denver's huge investment in a new airport are its two hub airlines, Continental and United. Critics claim that because the new airport will substantially increase the number of gates, the airlines are protecting their share of the market and blocking competition.

The last new metropolitan airport constructed from scratch was Dallas-Ft. Worth in 1974. The industry is in need of 10 to 16 new airports in operation by the year 2000. Yet, it takes more than a decade to plan and build a completely new airport. As the oligopoly strengthens, surviving airlines can look forward to relative prosperity and stability in the future. A regulated oligopoly has been replaced by an unregulated one, and for the foreseeable future the 1980s window of competition has been closed. In this industry, at least, the verdict is still out as to whether a deregulated environment has successfully replaced a regulated one.

CONCLUSION

The general purpose of this chapter was to examine the nature and extent of the regulatory functions of the federal government. The subject of regulation produces mixed reactions on the part of business firms and households. There is hardly a person who doesn't favor some form of strong government control over others, not themselves. As individuals, there are few among us who wish to reduce our personal and economic freedoms by submitting to government regulation. At the same time, we have little conceptual difficulty in wanting others to be regulated. Although simplistic, this helps to explain the increased demands for regulation and the resulting federal regulatory bureaucracy.

It should be realized that the central question is not whether government regulation is good or bad, but whether social benefits exceed the social costs of specific regulations and even agencies. The airline industry is a case in point. With the demise of the CAB, the airlines experienced a competitive shock wave that brought about numerous changes in the structure, behavior, and performances of individual carriers. The 1990s will produce a clearer picture of the costs and benefits of deregulation, and it is possible that society may once again demand that the decision to deregulate be reversed.

QUESTIONS FOR DISCUSSION

1. Which agencies, if any, do you believe are engaging in excessive regulatory activities? Which agencies, in your opinion, should be strengthened and given greater regulatory powers?
2. Despite recent moves to deregulate certain industries, little is heard in Washington about the likelihood of similar deregulation in the area of social regulation. What factors do you believe account for this?
3. Analyze the following statement: "Elected officials legislate new authorities and programs—and thus bigger jobs—for bureaucrats; the bureaucrats operate their agencies and programs to meet the demands of vote-producing constituency groups; the constituencies then help reelect the politicians."
4. In your view, will federal regulation continue to grow in the future? If so, at what pace and in what form? What will the relationship be in the year 2000 among consumers, business enterprises, and government?
5. Hammurabi, king of Babylonia in the eighteenth century B.C., included among his famous codes a regulation for home construction. In essence, the code stated that if a house collapsed and killed the occupant, the builder should be put to death. How does Hammurabi's building code differ from today's social regulation?
6. What do you see as the benefits and costs associated with the deregulation of the airline industry? Compare and contrast this with a regulated airline industry.
7. What steps, if any, would you recommend to limit market power on the part of the airlines?

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7

SOCIAL SECURITY
WILL IT BE THERE?

Today, many young and middle-aged people are wondering whether sufficient funds will be left in the Social Security trust funds to pay them benefits when they retire. Considering the problems experienced with Social Security over the past few decades, this concern is reasonable. Can workers of today count on sufficient funds being there? What are the risks? Should they provide for substitute or supplementary retirement benefits?

In August 1935, after months of Congressional debate and years of political and public controversy, President Franklin D. Roosevelt established a system of social security by signing into law the Social Security Act. The establishment of a social security system in the United States occurred decades after similar programs had already been adopted by several European countries. Bismarck had inaugurated a social security program in Germany in the 1880s. Austria and Hungary followed shortly thereafter. Great Britain established old-age-pension and unemployment programs between 1908 and 1925. The hardships of the Great Depression stimulated interest in the adoption of social security in the United States. As a consequence, President Roosevelt

in June 1934 created the Committee on Economic Security to study the problems relating to economic security and to make recommendations for a program of legislation to deal with unemployment and economic security for the aged. Most of the committee's recommendations were incorporated one year later in the initial Social Security Act.

THE SOCIAL SECURITY ACT

The first unemployment benefits under the Social Security Act were paid by the state of Wisconsin in 1936, and the first monthly payments under old-age and survivors insurance benefits were made in 1940. In 1937, the Supreme Court upheld the constitutionality of the act under the "general welfare" clause of that same year, and workers began to pay into the system and acquire credit toward old-age insurance benefits.

Provisions of the Act of 1935

As originally passed, the Social Security Act contained three major provisions:

- A federal system of old-age insurance benefits for workers
- A federal-state system of unemployment compensation benefits
- A program of federal financial aid to states to help them provide public assistance to the needy aged, the needy blind, and dependent children

Other programs established by the act included maternal and child health care services, child welfare services, services for crippled children, vocational rehabilitation, and assistance to states for public health services.

At the time the act was passed, only 3.5 million workers had any type of old-age retirement benefits, and only four states had any form of unemployment benefits. The act provided old-age insurance for millions of additional workers but covered only employees in industry and commerce. Therefore, the federal old-age insurance system covered only six out of ten members of the labor force.

Many types of workers were not covered by the new Social Security system because of administrative or other difficulties. Such workers included agricultural employees; domestic service workers; casual laborers; merchant ship crew members; employees of federal, state, and local governments; workers in nonprofit institutions such as schools and hospitals; and all workers over 65 years of age. The act also excluded railroad workers because they had retirement benefits under the federal Railroad Retirement Act.

Subsequent amendments to the act included many workers who were initially excluded. In 1939, for example, workers in the U.S. merchant marine service, employees of national banks, and workers in savings and loan associations and similar institutions became eligible for Social Security. In 1950,

Congress broadened coverage again to include nonfarm, self-employed workers and regularly employed agricultural and domestic workers. Also included were some civilian federal employees who were not covered under existing retirement programs. Employees of nonprofit institutions, and those employees of state and local governments who were not already under a retirement system became eligible for voluntary coverage.

Amendments in 1950 extended old-age coverage to nearly ten million additional workers, most of them self-employed. In 1954, additional amendments extended coverage to farmers, some professionals, and members of religious orders. Two years later, coverage expanded to include three million or more members of the armed services currently on active duty. Self-employed physicians joined the system in 1965, by which time the only large group of workers not participating in the Social Security system was federal employees covered by other government pension systems. Today the Social Security system provides social-insurance protection for old-age, disability, and death benefits for 90 percent of all wage and salary workers and the self-employed.

Federal Old-Age Benefits

The 1935 act provided for monthly benefit payments, beginning in 1942, to insured workers when they reached retirement age of 65 years or more. Benefits were based upon the employee's earned wages during a qualifying period. The maximum payment was to be $85 per month and the minimum was to be $10 per month. Those reaching age 65 without qualifying for monthly benefits would receive a lump-sum payment equal to 3.5 percent of the employee's lifetime earnings. The law also provided a death benefit of the same amount, less benefits previously received.

In 1939, Congress amended the law to increase benefits, adopt a new formula for computing them, start benefit payments in 1940 instead of 1942, and pay surviving family members of deceased persons covered by the act. In 1950, benefit payments were increased again to make it possible to include earnings up to $3,600 per year, instead of the initial $3,000 per year, when computing benefits. In addition, Congress changed the first year that could be used for calculating benefits from 1936 to 1950, mainly because many of the newly eligible groups of workers had no applicable earnings prior to that time.

The maximum amount of earnings allowable for purposes of calculating benefits increased in 1955 to $4,200 per year and by the mid-1960s to $5,500. In 1990 it jumped to $51,300. The desire to provide larger benefits also moved Congress to revise several times the formula for determining benefits.

The original Social Security Act provided old-age benefits only for insured workers. Subsequent amendments provided for old-age payments to dependents and for death benefits to survivors in the event the insured died, and over the life of the act these benefits have increased. In 1956, amendments

to the act permitted women to receive benefits at age 62. In 1961, Congress extended the amendment to permit men to draw a reduced benefit at age 62. Disability benefits, financed by a separate trust fund, were added in 1956 and were subsequently liberalized. By 1990, the maximum individual primary benefit for a person retiring at age 65 had increased to $1,186 per month. Average monthly old-age benefits paid had risen from $23 per month in 1940 to $541 per month in 1990.

Eligibility

In order to collect benefits under the 1935 act, a worker had to have earnings over a specified period of time in employment covered by the act. In 1939, amendments provided for two types of insured status. A worker became "fully insured" only when at least $50 was earned in covered employment in each of 40 quarters (ten years). This provision was later modified because new groups and the self-employed came into the system. In 1984, workers were considered fully insured if their quarters of covered employment equalled at least the number of years between 1950 (or age 21, if later) and age 61 (or the date of death, if earlier).

Under the original act, a worker had to retire completely in order to receive benefits. Subsequent amendments, however, permitted a retired worker to earn up to $1,200 per year without losing benefits. This figure was later boosted first to $1,500 and then to $3,000. It is now $9,360 per year for persons aged 65–69. If a worker earns more than the stipulated amount, according to the earnings test, a penalty is imposed with the loss of some benefits. At age 70 and beyond, however, there is no restriction on the earnings of a worker collecting federal old-age benefits.

Hospital and Health Care (Medicare)

In 1935, the President's Committee on Economic Security had recommended a form of health-care coverage for eventual inclusion under Social Security. In 1965, this recommendation finally was realized in the form of the Old Age, Survivors, Disability, and Health Insurance program (OASDHI). Under the OASDHI program, Social Security coverage was extended to do the following:

- Provide insurance protection against the cost of hospital and related health care to covered individuals 65 years of age or older
- Provide hospital insurance for persons not covered under the act who reached age 65 before 1968
- Pay out of general revenue funds half the cost of insurance to cover the cost of physician's fees for persons 65 years of age and over
- Liberalize the earnings test, the definition of disability, and the cash benefits payable for disability
- Increase the federal matching ratios for public assistance

- Increase federal grants to states for maternal and child health care and welfare services
- Increase the Social Security payroll tax to finance the new Medicare package

Supplemental Security Income

In addition to regular OASDHI benefits, the Social Security program, since 1965, has provided monthly checks to people in financial need who are 65 or older, and to people of any age who are blind or disabled. Persons who have little or no cash income and who do not own much property may get supplemental security income (SSI) even if they have never worked or paid Social Security taxes or are otherwise ineligible for Social Security benefits. SSI is not the same as Social Security even though the program is run by the Social Security Administration. The money for SSI checks comes from general funds of the U.S. Treasury. Persons who receive Social Security benefits may also obtain SSI checks in some cases.

THE 1972 AMENDMENTS

Prior to 1972 the Social Security law provided that a retiree's initial old-age benefit be based on earnings up to the level of the Social Security wage base existing during a person's working life. Moreover, there were no automatic increases in either the wage base, on which benefit payments were calculated, or the schedule of benefits. The only way either could be changed was by an act of Congress.

In 1972, Congress amended the Social Security Act to provide automatic increases in the wage base, thereby producing a gradual rise in initial old-age benefit payments. In addition, the schedule of future benefits of current workers, along with the current benefits of current beneficiaries, was to be automatically adjusted by tying benefits to the Consumer Price Index. The primary purpose of this measure was to adjust the purchasing power of benefits to offset increases in the cost of living. As prices rose, the future benefits of current workers would be adjusted upward. But higher prices were also in large part responsible for higher earnings, which would yield greater benefits upon retirement. This double adjustment, commonly referred to as "coupling," helped cause the "replacement rate"—the ratio of a worker's retirement benefit to previous average monthly earnings—to rise substantially. This increase put an added burden on the Social Security system.

With the highly inflationary conditions of the 1970s, the coupling process resulted in substantial increases in old-age and survivors benefits payments. Between 1972 and 1976, for example, the average monthly benefit for a retired worker increased by 39 percent in current dollar value.

Table 7-1 shows changes in federal old-age benefits as compared to changes in the Consumer Price Index (CPI). Notice that the average monthly benefit for a retired worker has increased 1,133 percent, from $43.86 in 1950 to $541.19 in 1989. In constant dollars, the average monthly benefit increased 140 percent, as shown in the final column of Table 7-1. Between 1970 and 1989, the average monthly benefit rose from $118 to $541.19, an increase of 359 percent in current dollars (see Figure 7-1). During that same period the average benefit in constant dollars rose 44 percent. After the 1977 amendments, however, constant-dollar benefits remained more stable.

FINANCING SOCIAL SECURITY

According to the 1935 act, old-age and survivors' insurance was to be financed solely through a payroll tax levied on both employers and employees. The initial tax rate was 1 percent each on both employer and employee for the first $3,000 of yearly earnings. An increase of 0.5 percent was to occur every three years until 1949, when the total contribution by both employer and employee would become 3 percent. Subsequent amendments by Congress, however, postponed or eliminated these increases until 1950, when the tax rate increased to 1.5 percent and the tax base jumped to $3,600 per year. The tax rate stayed at that level until 1954 when it rose to 2 percent. It stayed at that level through

TABLE 7-1

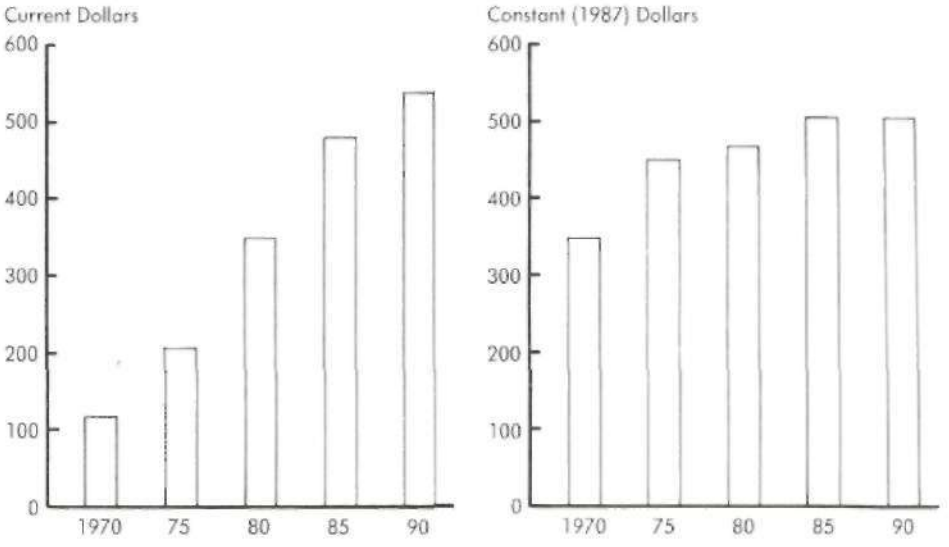
Average Monthly Social Security Benefit for a Retired Worker in Current and Constant Dollars, 1950–1989

Year	Average Monthly Benefit	Cumulative % Increase	CPI (1982–84 = 100)	Average Monthly Benefit (In 1982–84 $)	Cumulative % Increase
1950	43.86	--	24.1	181.99	--
1955	61.90	41	26.8	230.97	27
1960	74.04	69	29.6	250.14	37
1965	83.92	91	31.5	266.41	46
1970	118.00	169	38.8	304.12	67
1975	207.00	372	53.8	384.76	111
1980	341.41	678	82.4	414.33	128
1985	478.62	991	107.6	441.81	143
1986	488.44	1,014	109.6	445.66	145
1987	512.65	1,069	113.6	451.28	148
1988	536.77	1,124	118.3	453.74	149
1989	541.19	1,133	124.0	436.44	140

SOURCE: *Statistical Abstract of the United States* (1989 and previous issues) and *Social Security Bulletin* (February 1990).

FIGURE 7-1

Average Monthly Social Security Benefits for Retired Workers, 1970–1989



SOURCE: Chart prepared from data in Table 7-1.

1956 even though the tax base was increased to $4,200 per year. The next year the rate was increased by 0.25 percentage point to cover the cost of disability insurance. Increases subsequently raised the rates to 4.2 percent on $6,600 of earnings by 1966. At that time scheduled increases were to raise the rates to 4.85 percent by 1973. Moreover, additional taxes were to be added to finance hospital insurance, beginning in 1966. That rate, initiated at 0.35 percent on employer and employee in 1966, was to rise to 0.80 percent each in 1987.

According to the act, receipts from payroll taxes were to be deposited in a special reserve account, or trust fund, with the U.S. Treasury. Future benefits were to be paid entirely from the trust fund so that there would be no need to use general revenue funds. The law required that the funds in the account be invested in securities of the federal government, and that interest from these securities also be used for the payment of benefits.

Even though amendments which increased the number of covered workers and raised the size of benefits increased the cost of the Social Security program, the trust fund grew more rapidly than anticipated in the first two decades. This was due to the increase in employment and the payment of higher

wages, especially because of World War II. As a result, scheduled increases in the tax rates were eliminated or postponed.

Tax contributions plus earned interest on government securities continued to exceed disbursements for old age and survivors insurance until 1957. In that year disbursements for benefits exceeded net income for the first time in the short history of the Social Security program. Net assets of the trust fund declined until the mid-1980s.

Between 1970 and 1975 total assets (reserves) of the OASI trust fund fell from 111 percent of annual expenditures to 62 percent of annual expenditures, as shown in Table 7-2. Moreover, by 1977, reserves equaled less than 50 percent of annual expenditures. In addition, in the period 1970–1976, the number of retired workers increased 28 percent. It was also projected that in

TABLE 7-2

Social Security (OASDHI) Trust Funds, 1970 to 1988
(In billions of dollars, except percent)

	1970	1975	1980	1985	1989
Old-age and survivors insurance (OASI)					
Net contribution income	30,256	56,816	103,456	180,165[b]	205,745
Transfers from general revenue	449	425	540	2,203[b]	42
Interest Received	1,515	2,364	1,845	1,870	9,660
Benefit payments	28,796	58,509	105,074	167,248	204,600
Administrative expenses	471	896	1,154	1,591	1,657
Assets end of year	32,454	36,987	22,824	35,842	148,319
Reserve ratio[a] (percent)	111	62	21	21	72
Disability insurance (DI)					
Net contribution income	4,481	7,444	13,255	17,413[b]	23,829
Transfers from general revenue	16	90	130	1,017[b]	--
Interest received	277	502	487	870	870
Benefit payments	3,067	8,414	15,437	18,827	22,517
Administrative expenses	164	256	368	608	747
Assets end of year	5,614	7,354	3,629	6,321	8,363
Reserve ratio[a] (percent)	174	84	23	34	36
Hospital insurance (HI)					
Net contribution income	4,881	11,509	23,866	47,576[b]	NA
Transfers from general revenue	874	669	871	47	NA
Interest received	161	671	1,116	3,362	NA
Benefit payments	5,124	11,318	25,067	47,580	NA
Administrative expenses	157	263	476	834	NA
Assets end of year	3,202	10,517	13,749	20,499	NA
Reserve ratio[a] (percent)	61	91	54	42	NA

[a]Assets at the end of the year as a percentage of benefit payments and administrative expenses during the year.
[b]Does not include money transferred from the railroad retirement account.

SOURCE: *Social Security Bulletin* (February 1990).

future decades a greater percentage of the population would be in the retirement-age bracket.

With an increasing number of workers retiring with higher initial old-age benefits, the Social Security Administration foresaw the eventual depletion of the OASI and DI trust funds within eight years. One 1976 projection for the status of the trust funds is shown in Table 7-3. This depletion of the trust funds and the pending deficit was to occur despite the scheduled increases in the payroll tax wage base and the tax rates.

A number of factors help to explain the substantial decline in the levels of the OASI and DI trust funds. First, benefits for persons already retired had been indexed since 1972 to the Consumer Price Index. With the higher rates of inflation in the 1970s, this indexing resulted in a sharp increase in benefit payments. Second, the high levels of unemployment during the 1970s, especially during the 1974–1975 recession, resulted in a slowdown in the growth of payroll tax receipts. Third, the number of beneficiaries receiving disability insurance payments was higher than anticipated. In fact, the drain on the disability trust fund was so rapid that it was estimated in 1977 by the Social Security Administration that the fund would be depleted by 1983. Finally, the unintentional process of coupling benefits to a higher wage base and to the CPI caused initial benefits of retirees to rise more rapidly than wages.

Wage rates were expected to rise because of inflation. Therefore, the wage base for Social Security payroll taxes was increased. Because retirees' benefits were based on earnings in their most recent work years (which, incidentally, had higher wage bases than earlier years), initial retirement benefits were higher than they would have been under the older law. The linking of benefits to the CPI meant that benefits would also increase as the CPI increased. In other words, linking benefits to both the wage base and the CPI was tantamount to granting a double adjustment for inflation.

Over the long run, the OASI and DI trust funds seemed to be in even more serious trouble. Using the wage base, payroll tax, and age and retirement assumptions existing in 1977, the Social Security trustees estimated that

TABLE 7-3

Projected Status of Trust Funds as of 1976

Year	Trust Fund Reserves (Billions)
1977	$41.1
1978	35.5
1979	28.6
1980	20.7
1981	11.6
1982	0.1
1983	−14.8

average OASI and DI expenditures over the next 75 years would exceed payroll taxes by an amount equivalent to 8 percent of taxable earnings. Avoiding this situation would require a tripling of Social Security tax rates by the year 2050 just to finance the schedule of future benefits provided for in the existing law.

Analysts calculated not only that half the projected long-range deficit was due to double adjustment for inflation, but also that double indexing would eventually cause benefits to exceed preretirement wages for some workers. According to these same calculations, the other half of the projected deficit resulted from a continued increase in disability payments and a sharp rise after the year 2000 in the number of retired persons relative to the total working population. For example, in 1977 there were 19 persons aged 65 or over for every 100 persons in the 20–64 age bracket. Estimates for the year 2030 indicate there will be 34 persons 65 or over for every 100 persons in the 20–64 category. In other words, in a generation or two the ratio of current workers to retirees, their survivors, and their dependents could drop from 3 to 1 to 2 to 1.

Taking into consideration the findings of an Advisory Council on Social Security appointed in 1975 and Congressional hearings on the subject, Congress in 1977 struggled hard to find a solution to the Social Security problem. One controversy revolved around whether OASDHI benefits should be financed solely through payroll taxes or in part from general revenue funds of the federal government. This debate led to a broader question regarding the very nature of the Social Security system. Should it be an actuarially sound system in which benefits paid at retirement are based strictly on an individual worker's tax contributions (and those of the employer) made during the individual worker's life? It was evident that the system long ago had moved away from this concept to a "pay-as-you-go" philosophy in which tax contributions from current workers were used to finance benefit payments to current retirees. Consequently, some analysts suggested using general revenue funds to help finance Social Security benefits. Others thought that such a practice would lead to widespread liberalization of benefits and abuses of the system.

It was also pointed out during the hearings by witnesses that, for a number of reasons, the Social Security system was more a huge "transfer payment" (from tax payers to beneficiaries) mechanism than an insurance program. For example, benefits paid to higher-income wage earners were not in proportion to the greater amount of taxes they paid during their working years. Many lower-income wage earners, however, were receiving benefits greater than their tax contributions. This was especially true of people receiving the minimum benefit. In fact, some of the tax funds provided benefits to persons who had contributed nothing whatsoever.

A further point of controversy arose regarding the relative benefits accruing to single-wage-earner families as compared to dual-wage-earner families. The retirement benefit to a worker and nonworking spouse was as good as that going to a family in which both the husband and wife worked prior

to retirement. Many working wives thought they were being cheated because, in effect, they could receive the same amount of benefits by not working. In other words, their contribution counted for nothing extra in benefit payments to the family.

Congress also debated whether the employer-employee tax rates should be identical. Some lawmakers advocated that the employers ought to pay a larger portion of the total tax. The amount of the tax rate for the self-employed worker was also given consideration.

There was also much discussion about the best way to increase contributions to avoid future deficits. Some members of Congress strongly suggested that tax rates be increased substantially. Others advocated increasing the tax base (the amount of income upon which Social Security taxes are paid). Those objecting to an increase in the tax rates did so largely because they believed that the higher rates would hit lower income groups the hardest. They reasoned that because taxes are paid only on earnings within the tax base, it would mean that part of the income of higher-wage earners would not be subject to the tax while almost all lower-income and many middle-income wage earners would have their entire earnings subject to higher Social Security taxes.

Those advocating increasing the tax base did so with the notion that the additional funds needed could be raised in this manner. Raising the base would tax wages in excess of the current base, thereby increasing Social Security taxes for middle and, particularly, high-wage-earning groups while leaving them unchanged for the lower-income group.

The problems caused by the coupling process also came in for much discussion and debate. It was pointed out by the Advisory Council that coupling had increased the replacement rate, which is the ratio of a worker's Social Security benefit to that worker's final working pay, from an average of 31 percent between 1950 and 1969 to 43 percent in 1977. The Advisory Council on Social Security recommended that the rate be kept between 40 and 45 percent.

Other matters discussed and debated included the feasibility of taxing Social Security benefits; raising the retirement age; incorporating civilian employees of the federal government, along with their existing pension fund, into the Social Security system; and making any future national health insurance program a part of the Social Security system.

THE 1977 AMENDMENTS

After much discussion, and faced with a pending deficit in both the short and long runs, Congress amended the Social Security Act in 1977 to alleviate the system's financial plight. Since Congress has generally operated on the presumption that Social Security benefits should be financed primarily by means of payroll tax receipts, it was essential to raise Social Security tax rates

and/or the wage base if deficits were to be avoided. The major changes brought about by the 1977 amendments include the following:

- Elimination of the double adjustment in benefits for inflation. This change was expected to cut the pending long-run deficit by one-half.
- Increase in Social Security tax rates for both employers and employees beginning in 1979.
- Increase in the self-employment tax.
- Reallocation in 1978 of current tax receipts among the trust funds to prevent the reserves of the disability insurance fund from being exhausted.
- Increase in the taxable wage base for employers, employees, and the self-employed. The base increased from a maximum of $25,800 in 1983 to $43,800 per annum in 1987. Since then, it has climbed to $51,300 and is indexed to go higher.

The 1977 law also made a number of changes in the benefit structure. Regarding the retirement or earnings test, for example, under the prior law a retiree between the ages of 65 and 72 could earn up to $3,000 annually without suffering a benefit penalty. For every $2 in earnings above the $3,000 level, however, the retiree's benefit was reduced by one dollar. There was no restriction for retirees aged 72 or more. Under the 1977 law, however, the ceiling on earnings for a retired worker between the ages of 65 and 69 rose to $4,000 per year in 1978, and then by $500 increments up to a ceiling of $6,000 by 1982. It is now $8,800. When earnings in any year exceeded the ceiling, Social Security benefits were reduced by $1 for every $2 earned in excess of the ceiling.[1] According to the 1977 law, no earnings ceiling was imposed on beneficiaries after they reached 69 years of age. Now that age is 70.

The 1977 amendments provided a bonus, however, for those who postponed retirement beyond age 65. Benefits rose from 1 to 3 percent for each year between the ages of 65 and 72 that an eligible retiree elected not to receive benefits.

THE 1983 AMENDMENTS

Despite the 1977 amendments, by the end of the 1970s it was evident that economic growth was much lower than had been anticipated and that, as a result, the Social Security program would experience significant difficulties in the 1980s. In October 1980, Congress provided that tax revenues from the DI part of the program be allocated to the OASI part of the program for the years 1980 and 1981. This measure was to give Congress additional time to deal with continuing OASI financial problems.

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1. The ceiling was prorated and imposed on a monthly basis during the first year of retirement. Thereafter, it was on an annual basis.

In December 1981, Congress authorized borrowing among the OASI, DI, and HI trust funds through December 1981, to meet benefit obligations through the first six months of 1983. Also in December 1981, President Reagan established the National Commission on Social Security Reform (NCSSR) with the charge to review the current and long-range financial condition of the Social Security trust funds and report its findings to the President and Congress by December 31, 1982.

In the meantime, the 1982 Annual Reports of the Boards of Trustees of the OASI, DI, and HI trust funds showed that both the OASDI and the HI programs faced serious financing difficulties and that without remedial legislation the OASI trust fund would be unable to make timely benefit payments after June 1983.

After nearly two years of debate, and consideration of several different proposals, Congress passed and, on April 20, 1983, President Reagan signed Public Law 98-21, the Social Security Amendments of 1983. The 1983 Amendments included provisions for universal coverage, benefit computation, taxing of benefits, revenue measures, and financial effects.[2]

Universal Coverage

The 1983 act extended Social Security taxation and subsequent benefits in the following ways:

- All federal employees hired after January 1, 1984, including executive, legislative, and judicial branch employees are covered. This includes all members of Congress, the President, the Vice-President, federal judges, and most executive-level political appointees of the federal government.
- Current and future employees of private tax-exempt nonprofit organizations are covered effective January 1, 1984, on a mandatory basis.
- States are prohibited from terminating coverage of state and local government employees if the termination has not gone into effect by April 20, 1983.

Benefit Computation

Benefit computation of Social Security according to the 1983 amendments was adjusted in the following ways:

- The July 1983 cost of living adjustment (COLA) was delayed until January 1984. Future automatic COLAs are effective on a calendar year basis, with the increase payable in January rather than July of each year.

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2. *Social Security Bulletin* (July 1983) pp. 25–40.

- Beginning with the December 1984 benefit increase, payable in January 1985, if the ratio of combined OASI and DI trust fund assets to estimated outgo falls below a given percentage, automatic increases will be limited to the lesser of the increase in wages or in prices. The triggering trust fund percentage is 15 percent through December 1988, and 15 percent thereafter.
- For workers who are first eligible after 1985 for both Social Security retirement benefits and a pension based on noncovered employment, a different method of computing the Social Security benefit will apply.
- Beginning in 1990, the earnings-test benefit reduction will decrease for individuals who attain full-benefit retirement age, from $1 for each $2 of earnings over the annual exempt amount to $1 for each $3 of excess earnings. In 1990, pensioners below age 65 could earn $6,000 and those 65 to 69 could earn $8,160 with no cut in benefits. There was no limit for people 70 and older. The amounts for the first two categories were raised to $6,840 and $9,360, respectively, in 1990.
- The delayed retirement credit (DRC), payable to workers who postpone retirement past the full-benefit retirement age (currently age 65) and up to age 70, will be gradually increased. The credit is currently 3 percent per year.

Income Tax Treatments of Benefits

The 1983 law provided, for the first time, income taxation of some Social Security benefits. After 1984, up to one-half of Social Security benefits received by taxpayers whose incomes exceed certain base amounts will be treated as taxable income. The base amounts are $25,000 for a single taxpayer, $32,000 for married taxpayers filing jointly, and zero for married taxpayers filing separately.

Revenue Measures

The 1983 amendments established higher tax rates, along with a higher tax base, as a means of raising more Social Security revenue. (Table 7-4 shows the Social Security tax rates and allocation of tax income for employees and employers under Public Law 98-21 and under prior law.)

- The previous scheduled tax increase for 1985 was moved ahead to 1984, and a part of the scheduled increase for 1990 took effect in 1988.
- For 1984 only, Public Law 98-21 provided a credit for employees against their Social Security tax liability of 0.3 percent of their wages.

Fund Management

Under the economic assumptions used for the 1983 Amendments, Public Law 98-21 was expected to provide a total of $166.2 billion during the period

TABLE 7-4

Social Security Tax Rates Under Public Law 98-21 and Under Prior Law

	Employer and Employee Rates				Self-Employed Rates			
Year	OASI	DI	HI	OASDHI	OASI	DI	HI	OASDHI
Public Law 98-21:								
1983	4.775	0.625	1.3	6.7	7.1125	0.9375	1.3	9.35
1984	5.2	0.5	1.3	7.0	10.4	1.0	2.6	14.0
1985	5.2	0.5	1.35	7.05	10.4	1.0	2.7	14.3
1986–87	5.2	0.5	1.45	7.15	10.4	1.0	2.9	14.3
1988–89	5.53	0.53	1.45	7.51	11.06	1.06	2.9	15.02
1990–99	5.60	0.6	1.45	7.65	11.20	1.2	2.9	15.3
2000 and later	5.49	0.71	1.45	7.65	10.98	1.42	2.9	15.3
Prior Law:								
1983	4.575	0.825	1.3	6.7	6.8125	1.2375	1.3	9.35
1984	4.575	0.825	1.3	6.7	6.8125	1.2375	1.3	9.35
1985	4.75	0.95	1.35	7.05	7.1250	1.425	1.35	9.9
1986–89	4.75	0.95	1.45	7.15	7.1250	1.425	1.45	10.0
1990 and later	5.1	1.1	1.45	7.65	7.6500	1.65	1.45	10.75

SOURCE: *Social Security Bulletin* (April 1989).

1983–1989 in additional revenues or reduced cost and provide a surplus in each year through 1992. The main provisions governing fund management are as follows:

- The law established accounting procedures for crediting the OASI, DI, and HI trust funds at the beginning of each month with estimated revenues for the entire month.
- The law reinstated and extended authority for interfund borrowing among the OASI, DI, and HI trust funds during the years 1983–1987. Repayment of the principal, with interest, was to occur at the earliest feasible time but no later than the end of 1989.
- If the Board of Trustees determines at any time that the OASI, DI, or HI trust fund reserve ratio may become less than 20 percent for any calendar year, the Board must promptly submit to Congress a report recommending statutory adjustments affecting the receipts of, and disbursements from, the trust funds to achieve a 20-percent ratio.

CURRENT STATUS OF THE TRUST FUNDS

In January 1990, more than 39 million persons were receiving Social Security benefits of one kind or another. The average monthly benefit for a retired worker was $541.19. For a retired worker and spouse, the average monthly benefit amounted to $820.63.

In 1989 net receipts to the OASI trust fund from tax contributions, transfers from general government revenues, and interest income amounted to $215.4 billion. During the same year, expenditures from the trust fund for benefit payments and administrative expenses were $205.2 billion. Adding the differences to reserve assets, there were $179.4 billion in the combined OASI, DI, and HI trust funds. The $280.7 billion in combined benefit payments amounted to about 24 percent of the federal budget and 4.0 percent of the GNP.

In 1990 a payroll tax of 14.30 percent—7.15 percent paid by the employer and 7.15 percent paid by the employee—on earnings up to $48,900 per year financed the Social Security program. In 1990 the tax for both increased to 7.65 percent on higher earnings of $51,300. At present, about 90 percent of all wage and salary earners, as well as the self-employed, are covered by Social Security and subject to its compulsory contributions (taxes).

DO AMERICANS PAY TWICE FOR SOCIAL SECURITY?

Some critics of Social Security claim that participants are paying twice for their benefits, once when the payroll tax is paid and again when they receive their benefits. This happens, they say, because of the way in which Social Security contributions are funneled through the trust funds.

Monies held in the Social Security trust funds must by law be invested in U.S. government securities. Thus, the initial payroll tax funds are invested in U.S. government securities and held as assets in the respective trust funds. In effect, the Social Security Administration lends its reserves to the U.S. Treasury, and interest collected on these securities adds to the value of the trust funds. When the Social Security Administration needs funds for distribution, it must redeem the securities for cash. When the securities are redeemed, however, the Treasury must either raise taxes or borrow funds in order to pay out the funds. Through these taxes, say the critics, the public pays for Social Security a second time when the government taxes us to obtain the money to pay off the securities redeemed by the Social Security Administration for the purpose of paying Social Security benefits.

Even if the general public were taxed directly to raise money to pay off the government securities, however, it would not be a double tax for Social Security. Actually, because the Social Security Administration purchases government securities, the Treasury can levy fewer taxes. The Treasury uses money borrowed from the Social Security trust funds in lieu of tax funds to purchase certain goods and services. As a result, some taxes that would have been collected otherwise do not need to be collected, or their collection is postponed. For example, money borrowed from the Social Security trust funds may have been used to build a dam or other such project. As a result, no taxes are collected for that purpose. When the borrowed funds are paid back at the time the Treasury redeems the securities held by the trust funds, the tax we

may pay to give the Treasury the money it needs to pay off the securities is a tax to pay for the dam. In other words, the tax we should have paid earlier for the dam was postponed until the time when the borrowed funds had to be repaid. The true purpose of the tax at that time is to pay for the dam, not to pay again for Social Security.

WHO ARE THE DOUBLE-DIPPERS?

Much concern has been expressed by critics in the Social Security controversy regarding the so-called double-dippers. This term refers to persons who are collecting two pensions from the federal government, one of which is Social Security.

Most people work and pay Social Security taxes on the first dollar earned and on every dollar thereafter, within the Social Security wage base, until retirement. If a person retires or quits early, he or she can collect no pension benefits until age 62. Upon official retirement the participant collects only one federal pension—Social Security.

Federal employees hired before January 1, 1984, excluding military personnel, did not contribute to the Social Security system because most were covered by their own pension systems. By holding a second job part time (moonlighting) that is covered by Social Security, however, a federal employee can get into the system. Another way federal employees can get coverage is by working again after retirement from their federal jobs. Many employees do so because they frequently retire at an earlier age than 65. In this situation, they can collect their federal pensions and at the same time be working on jobs covered by Social Security. Thus, when federal employees retire again at age 62, 65, or later, Social Security benefits can be collected in addition to the federal pension. Such people are called double-dippers. Non-federal workers covered by Social Security, however, are restricted by the earnings test from working and collecting Social Security benefits simultaneously.

Double-dipping would not be a serious problem except that Social Security benefits are weighted in favor of those at the low end of the income scale on the theory that the lower-income workers are poor people who had limited earnings during their work lives and who will need a little more help upon retirement. Double-dippers who worked for only a few years, or at part-time jobs, show up on the Social Security records as having had limited wage earnings. Consequently, they receive extra benefits as if they were low-income earners. A post-retirement federal employee with ten years of coverage under Social Security and a generous federal pension to boot will show up on the Social Security rolls as being poor, when that is not the case.

According to one estimate, terminating double-dipping would save the Social Security system more than $1 billion per year. There are several ways to eliminate double-dipping. One way is to bring all federal employees under the Social Security system. In fact, this has been done. The 1983 Amendments

provide for all newly hired federal employees to become part of the system and pay the tax. A second way is to deny federal employees Social Security coverage on second jobs or on jobs taken after retirement from their federal positions. This way of eliminating double-dipping had not been instituted as of 1990. A third way is to extend a current method of computing Social Security benefits so that they decrease for persons who also receive pensions on earnings from noncovered employment.

Catastrophic Health Insurance

In July 1988 Congress passed the Medicare Catastrophic Health Care Act. The act, which became effective on January 1, 1989, was to insure that the Medicare program would be sufficiently funded to protect older or disabled people from the devastating costs of hospitalization and prolonged treatment for serious illness and disease.

To help finance this increased coverage, medicare-eligible individuals (those who have reached the age of 65) were to be assessed a supplemental premium based on their federal income tax liability.

The premium, or surtax, amounted to $22.50 for every $150.00 in federal income tax liability in 1989, up to a maximum premium of $800 for every Medicare person. Depending on a person's income, this surtax amounts to a 2.5- to 4.0-percent tax increase on taxable income. Moreover, this premium was scheduled to increase gradually to $42.00 for every $150.00 in taxes paid in 1993, with a cap of $1050.00 per eligible medicare person. The premium was to be indexed thereafter based on increases in program costs and other factors.

By mid-1989, several groups, including the American Association of Retired Persons (AARP), were lobbying against the act on the grounds that it would create a financial burden on the elderly. Others, including the Congressional Budget Office, were pointing out that the premiums would generate a substantial surplus over what would be needed in the first five years of the program. Still others thought the program would run a deficit. Early in October 1989, as a result of the widespread opposition, the House of representatives voted overwhelmingly to repeal the act. A few days later, the Senate voted to retain but amend the act. As a result, the matter was sent to a House/Senate Conference Committee to attempt to reconcile the differences.

CONCLUSION

When the Social Security program was first inaugurated in 1935, it was intended to be self-financing and operated on an actuarially sound basis.

Contributions from payroll taxes were expected to exceed benefit payments in the early years and result in an accumulation of assets in the various trust funds.

A retiree's benefits were to be closely related to prior work-life earnings, except for special treatment given to those receiving minimum benefits. Moreover, the act was stated clearly that the purpose of the Social Security system was to provide only partial aid for beneficiaries. In other words, Social Security was not originally designed or intended to provide full living costs for retirees. Many individuals in the early years thought, too, that their payroll taxes plus their employers' contributions were going into individually numbered accounts, out of which they would receive benefits upon retirement. This was not the case, however, because the payroll taxes of all persons and employers go into general trust funds.

Amendments to the Social Security Act as early as 1939 began to change the program by providing that some individuals retiring in the early years of the program would receive benefits greater than the actual value of their combined employer-employee contributions, and that dependents of retired workers would receive benefits without any additional payroll taxes required.

In 1950, amendments moved the Social Security system further away from a fully funded, actuarially sound system toward the type of pay-as-you-go system that it is today, in which those currently working pay for the benefits of those who are retired.

Over the years, Congress has brought additional workers into the Social Security system and increased benefits periodically. In 1972, amendments provided for adjusting benefit levels according to changes in the Consumer Price Index so that they would rise automatically along with prices. In addition, because the maximum taxable earnings base was indexed roughly to consumer prices, it too increased over time, creating the so-called "coupling effect" or double adjustment for inflation.

In recent years all these changes strained trust funds that had accumulated over the previous 35 to 40 years. Social Security trustees projected depletion of the trust funds and eventual deficits for the early 1980s. In response, Congress in 1977 strengthened the Social Security trust funds to prevent the projected deficits from occurring. It did so mainly by increasing both the Social Security tax rate and the base of covered earnings.

The changes made by Congress in 1977 removed the immediate threat that the cash benefit programs would run out of funds, corrected the obvious flaw in benefit computation, and reduced the projected average deficit over the next 75 years from 8 percent of estimated payroll to 1.5 percent.

Nevertheless, the situation worsened. In 1983, because the trust funds were running out of money, Congress enacted additional amendments. These amendments included some expansion of mandatory coverage (especially to new federal employees), a delay and lessening of the cost-of-living adjustment, a decrease in the earnings test benefit withholding rate, an increase in the

delayed-retirement credit, the imposition of income taxes on certain Social Security benefits, the authorization of interfund borrowing, and an increase in the Social Security tax rates.

Some long-term issues, however, are still unresolved. Among the issues that remain are the following:

- Differences in the treatment of single- and dual-wage-earner households.
- Certain problems between the cash-benefit programs and private-retirement programs.
- Whether all government employees and their own pension reserve fund ought to be brought under the Social Security system.
- Whether a larger portion of Social Security benefits should come from general tax revenues. Moreover, economists and some politicians are concerned about the impact on the general economy from continuing rises in Social Security payroll taxes.

In its 1988 report to Congress the Social Security Board of Trustees gave a bright projection for the future of Social Security. Based on numerous variables, such as, changes in population, GNP, average wages, inflation, and interest rates, it presented four scenarios. The most optimistic was a prediction of a $220 billion surplus by the year 2000 rising to a $825 billion surplus by 2025. By that time total assets of the combined trust funds were estimated to be $15.2 trillion. The least optimistic estimate showed a surplus of $105 billion for the year 2000 rising to $200 billion by 2025.

Although the Board cautioned that its projections were not exact, it thought they were reasonable. It must be remembered, however, that for various reasons, previous optimistic projections for Social Security have gone awry. Therefore, it behooves all workers to make additional preparations for retirement.

Early in 1990, Senator Daniel Moynihan proposed a bill to rescind the increase in Social Security payroll tax that went into effect on January 1 of that year. He responded that the surplus in the Social Security trust funds, invested in government bonds, was being used to finance deficit spending by the U.S. Treasury. In other words, the funds were being used for non-Social Security purposes. Moynihan charged that such a practice was unfair to those paying Social Security taxes and beneficiaries. Moreover, he stated that the Social Security surplus was masking the true size of the federal deficit. Moynihan said that the federal government, instead of using the Social Security surplus to finance part of the deficit, should reduce it by reducing spending and/or increase taxes.

President Bush, other members of his Administration, and certain members of Congress opposed such a bill. As of spring 1990 no action had been taken on the proposed legislation.

QUESTIONS FOR DISCUSSION

1. Should Social Security benefits be financed wholly by general revenue funds?
2. Should all civilian employees of the federal government be forced to join the Social Security system?
3. Should the Social Security system revert to being fully funded and actuarially sound?
4. If a system of national health insurance is adopted in the United States, should it be incorporated into the Social Security system?
5. Should future Social Security contributions, if needed, be generated through increasing the tax base or the tax rate?
6. Should working spouses in dual-wage-earner households receive their own Social Security benefits independent of their partner's earnings and benefits?
7. Do you think that Social Security ought to be used as a transfer payment mechanism?
8. Congress, in early 1978, raised the compulsory retirement age from 65 to 70 years. Do you think that Social Security benefits should start at age 70 instead of the present 65 or 62 years of age?
9. Do you favor taxing Social Security benefits as regular income?
10. Should double-dipping be eliminated? If so, how?

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8

THE NATIONAL DEBT
WILL THE DEFICITS EVER END?

Large federal deficits in the past several years, and a national debt in excess of $3.0 trillion, have generated renewed interest in the problem of how the United States can pay its bills. Congress has raised the debt ceiling substantially in recent years to accommodate large planned federal deficits in connection with major income tax reductions and accelerated government spending. In an eight-year period, 1981–1989, the federal debt trebled from less than $1 trillion to more than $3 trillion, and today it is not uncommon to have an annual federal deficit of $100 to $200 billion. How did the debt arise? To whom do we owe it? How long can the debt continue to rise? Can it reach a point where it will bankrupt the nation? Is it fair or possible to pass the debt on to future generations? Why have we not paid it off? Will we ever pay it off? How much interest are we paying on the national debt? What happens when the debt comes due and the government does not have the money to pay? These are but a few of the many questions in the minds of citizens that this chapter tries to answer.

HISTORY OF THE DEBT

Since the nation's beginnings, the national debt has been a source of heated debate. A brief review of the past sheds some light on the present and reveals that many of the current issues regarding the debt are not new.

The Early Years

In 1789, Secretary of the Treasury Alexander Hamilton's proposal that the new Union assume the debts of the various states and of the Confederation, occasioned much argument and opposition. Most legislators agreed that the foreign debts should be taken care of as soon as possible, especially because the new nation probably would need to borrow additional money from foreign nations in its early years. There was little agreement, however, on what to do about domestic debts.

The entire plan and its funding method, according to Hamilton, would serve three purposes:

1. To serve as a common bond unifying the people of the nation and drawing the states closer together;
2. To establish a sound basis for further credit expansions both at home and abroad; and
3. To serve as a basis of circulating capital to help alleviate the shortage of currency in the new nation.

After Hamilton won his point to pay the old debts off at their original price, to pay the interest in arrears, to maintain the 6-percent interest, and to assume the state debts, the new nation began its fiscal career with a total outstanding debt of more than $77 million.

The plan was to gradually retire new federal debts by using new federal surpluses. Little progress was made in this direction, however, because government expenditures proved to be larger and revenues smaller than anticipated. In its first decade of operation the Treasury had difficulty balancing the budget, and the national debt, instead of being reduced, rose to nearly $80 million by the time the Federalists left office in 1801. During the 12 years of the Washington and Adams Administrations, $7.5 million of the original debt had been liquidated, but $10.6 million in new debt had been incurred.

In 1801, Thomas Jefferson became President and Albert Gallatin became the new Secretary of the Treasury. During the next 12 years, under the Jefferson and Madison Administrations, the national debt, including practically all the foreign debt, decreased by more than $46 million, leaving the unretired amount of debt at $34 million. But the addition of $11 million of new indebtedness for the Louisiana Purchase left a total federal debt of $45 million. Nevertheless,

Gallatin was able to show a remarkable 44-percent net reduction in the national debt during the years that he managed our federal finances.

This debt reduction did not continue because the Treasury found its outlays increasing rapidly, especially as a result of the War of 1812. The Madison Administration was forced to issue bonds at a substantial discount and short-term Treasury notes to raise money for the unpopular war. Even so, expenditures exceeded revenues and the national debt climbed rapidly to a new high of $127 million by the end of the Madison Administration in 1816.

The next 21 years, 1816 through 1836, saw a steady and substantial reduction of the national debt. Surpluses experienced in each of these years, some of them quite large, were applied to debt retirement. Increased trade after the War of 1812 produced an increase in government revenue from customs duties. Increased tariff rates plus large-scale sales of public land further added to federal revenues.

Reduction of the debt was so successful that during the early 1830s there was widespread discussion about what should be done with budget surpluses when within a few years the national debt would be eliminated. Secretary of the Treasury Roger Brooke Taney, in his report of December 1834, declared that on January 1, 1835 the remaining balance of the federal debt would be paid or provided for and stated that "the United States will present that happy, and probably in modern times unprecedented, spectacle of a people substantially free from the smallest portion of the debt."

Not only was the debt completely paid off by January 1835 but a large surplus had accumulated. By mid-1836 that surplus approached $40 million. After much debate and controversy, President Jackson finally signed a bill calling for the Treasury on January 1, 1837 to retain a surplus balance of $5 million and deposit any excess surplus with the states on a pro rata basis according to their representation in Congress. Since the surplus on that date amounted to $42 million, $37 million was available for deposit with the states. Although the distribution of the funds to the states was in the form of non-interest-bearing loans, it was never intended that the federal government would recall these loans. Consequently, they became outright gifts to the states. The distribution among the states was to be made in four installments. After making the first three installments, however, in 1837 the Treasury found itself in financial difficulty. The fourth installment of $9 million was postponed until 1839 but was never actually paid, and the surplus balance in the Treasury became a thing of the past never to be attained again.

Civil War Debt and Retirement

For most years until 1851, the federal government operated with budget deficits. One big item of expense during this period was the Mexican War, which cost approximately $64 million, of which $49 million were financed

through the sale of bonds and notes. The highest federal debt during the period between 1835 and the Civil War occurred in 1851, when it reached a level of $68 million. Thereafter, surplus years and debt repayment brought the national debt down to $28 million by 1857. Thereafter, it rose to nearly $65 million by the outbreak of the Civil War.

Naturally, financing the Civil War, which cost an estimated $3.5 billion, required an unprecedented amount of borrowing. Because $2.5 billion, or 70 percent of the war cost, came from loans, the national debt rose to an astronomical $2.77 billion by 1866, the year after the war ended. The per capita burden of the national debt was about $80. The war certainly cost more than the $400 million that the President had asked for at the beginning of the conflict so that the war might be "a short and decisive one." Most of the borrowing was financed at interest rates in excess of 6 percent, except for the $450 million in non-interest-bearing United States notes, otherwise known as "greenbacks," issued during the period. The large debt combined with depreciation of the greenback, which at times had a market value as little as 40 or 50 cents on the dollar, caused prices to rise rapidly.

Expansion of business activity after the war brought about increased tax revenues. In fact, many taxes imposed during the war did not begin to become effective revenue sources until after the war had ended. In nearly every year from 1866 to 1893, government receipts exceeded disbursements and the government was able to consistently reduce its debt. By the end of this period, the national debt was less than $1 billion. Although the debt rose above the $1 billion mark the following year, it remained fairly constant until World War I, fluctuating between $1 billion and $1.4 billion. In April 1917, our net national debt stood at $1,207,827,886, or $11.59 per capita. This was a reduction of $1.5 billion from the maximum of $2.7 billion of debt existing at the end of the Civil War.

World War I Debt and Depression Spending

Financing World War I resulted in a twentyfold increase in the national debt, which rose to $25.4 billion by 1919. Although Secretary of the Treasury McAdoo originally hoped to finance 50 percent of the war cost through taxation, he was soon convinced that his figure was too high and lowered his estimate to 33.3 percent. With greater-than-expected increases in government disbursements and the lag between new tax measures and the collection of revenues therefrom, the need for cash was staggering and the only way of obtaining it quickly was through borrowing. An outstanding feature of the war financing was the sale of liberty bonds to the general public in small denominations, with some as little as $50. The success of the first liberty loan campaign led to others. In total, the four liberty loan campaigns, plus the postwar victory loan of 1919, netted the federal government $21.5 billion.

After the war, expenditures, which had reached $2 billion per month, dwindled impressively by 1920. The prosperous Twenties, which brought

sizable surpluses, resulted in a reduction in the debt each year until 1930, when the total national debt was down to $16.2 billion, a reduction of 36 percent during the decade.

During the Great Depression, the gross national product fell from $103 billion in 1929 to $56 billion in 1933, while unemployment increased from 1.6 million to 12.8 million. With one-fourth of the labor force unemployed and many more partially employed, with homes being lost through mortgage default and businesses collapsing through bankruptcy, the federal government began to use the federal budget as a device to stabilize the economy. Deficit spending on public works and relief became the order of the day. New Deal deficits ran as high as $4.4 billion in 1936 and during the period 1932 to 1940 totaled more than $26 billion. As a result, the national debt reached a new peak of $43.0 billion in 1940.

World War II and Subsequent Debt

The entry of the U.S. into World War II in December 1941 resulted in additional increases in the national debt. The cost of the war was stupendous for the time. The total cost is estimated to have been $288 billion, and during the last few weeks of the war the country was spending an estimated $1 billion a day on the conflict. Although some of the cost was defrayed through extended and higher taxes, approximately three-quarters was financed through borrowed funds. Deficit budgets ran in excess of $45 billion a year in the last three years of the war. The national debt surpassed the $100 billion mark in the second year of the war; reached $200 billion during 1944; and by February 1946 reached a staggering $280 billion figure. This figure represented a burden of $2,000 per capita. The war financing program featured a sizable increase in direct taxes, the widespread use of withholding taxes, the levying of excess profit taxes, the advent of war-bond campaigns, and a large program of lend-lease to foreign nations.

Although the debt was subsequently reduced to $252.2 billion by 1948, no substantial effort has been made to pay off, or even reduce, the national debt since the end of the war. In fact, this country has enjoyed budget surpluses in only 8 of the more than 40 years since. Deficits incurred during the Korean conflict, plus the $12.9 billion deficit incurred in connection with the recession of 1958, moved the national debt toward the $300 billion mark. The sizable deficits of the two decades after World War II, and the even greater deficits of the past few years, as shown in Table 8-1, pushed the total debt up to the current figure of over $2 trillion; it is expected to exceed $3.0 trillion by the end of fiscal year 1990.

The last time the federal budget showed a surplus was for a modest $3.2 billion in fiscal 1969. With the use of deficit spending to stimulate the economy during the 1974–1975 recession, the deficit rose by over $50 billion. Deficits of $100 to $200 billion in the years 1982 through 1990 stirred much controversy as they pushed the national debt beyond $3.0 trillion.

TABLE 8-1

Federal Budget Receipts and Outlays for Fiscal Years 1929–1994
(In billions of dollars)

Fiscal Year	Budget			Off-Budget Outlays[a]	Gross Federal Debt
	Receipts	Outlays	Surplus or Deficit (–)		
1929	3.9	3.1	0.7	—	16.9
1940	6.5	9.5	–3.1	—	50.7
1945	45.2	92.7	–47.5	—	260.1
1946	39.3	55.2	–15.9	—	271.0
1947	38.4	34.5	3.9	—	257.1
1948	41.8	29.8	12.0	—	252.0
1949	39.4	38.8	0.6	—	252.6
1950	39.5	42.6	–3.1	—	256.9
1951	51.6	45.5	6.1	—	255.3
1952	66.2	67.7	–1.5	—	259.1
1953	69.6	76.1	–6.5	—	266.0
1954	69.7	70.9	–1.2	—	270.8
1955	65.5	68.5	–3.0	—	274.4
1956	74.5	70.5	4.1	—	272.8
1957	80.0	76.7	3.2	—	272.4
1958	79.6	82.6	–2.9	—	297.7
1959	79.2	92.1	–12.9	—	287.8
1960	92.5	92.2	0.3	—	290.9
1961	94.4	97.8	–3.4	—	292.9
1962	99.7	106.8	–7.1	—	303.3
1963	106.6	111.3	–4.8	—	310.9
1964	112.7	118.6	–5.9	—	316.8
1965	116.8	118.4	–1.6	—	323.2
1966	130.9	134.7	–3.8	—	329.5
1967	148.9	157.6	–8.7	—	341.3
1968	153.0	178.1	–25.2	—	369.8
1969	186.9	183.6	3.2	—	367.1
1970	192.8	195.7	–2.8	—	382.6
1971	187.1	210.2	–23.0	—	409.5
1972	207.3	230.7	–23.4	—	437.3
1973	230.8	245.6	–14.8	0.1	468.4
1974	263.2	167.9	–4.7	1.4	486.2
1975	279.1	324.2	–45.2	8.1	555.1
1976	298.1	364.5	–66.4	7.3	631.9
1977	355.6	400.6	–44.9	8.7	709.1
1978	399.6	448.4	–48.8	10.4	780.4
1979	463.3	491.0	–27.7	12.5	833.8
1980	517.1	590.9	–73.8	14.2	914.3
1981	599.3	678.2	–78.9	21.0	1,003.9
1982	617.8	745.7	–112.9	17.3	1,147.0
1983	600.6	808.3	–207.8	12.4	1,381.9
1984	666.5	851.8	185.3	16.2	1,576.7
1985	734.1	946.3	–212.3	14.8	1,827.5
1986	769.1	990.3	–221.2	6.7	2,112.0
1987	854.1	1003.8	–149.7	19.6	2,345.6
1988	909.0	1064.0	–155.1	38.8	2,868.8

(continued)

TABLE 8-1 *(continued)*

Fiscal Year	Budget			Off-Budget Outlays[a]	Gross Federal Debt
	Receipts	Out-lays	Surplus or Deficit (–)		
1989	975.5	1137.0	–161.5	56.0	2,868.8
1990[b]	1,059.3	1,151.8	–92.5	68.8	3,107.2
1991[b]	1,140.5	1,207.8	–66.8	80.0	3,335.6
1992[b]	1,212.2	1,244.4	–32.2	91.0	3,537.1
1993[b]	1,281.4	1,279.0	+2.4	104.6	3,719.7
1994[b]	1,345.0	1,311.6	+33.4	116.4	3,886.4

[a]Spending not included in regular budget and therefore not subject to statutory limit on Federal Debt.
[b]Estimate.

SOURCE: Economic Report of the President (1990) and The United States Budget In Brief (1990).

DEBT CEILING

The statutory limit or ceiling on the national debt was first established in 1917, when Congress passed the Second Liberty Bond Act. This act authorized the Treasury to issue bonds not to exceed $7,538,945,460 and to issue certificates of indebtedness up to $4 billion. As borrowing to finance World War I continued beyond expectations, Congress merely amended the Second Liberty Bond Act to accommodate new debt authority as needed. After the war, the same procedure continued, as it has carried on to the present day. Thus, the successive rises in the national debt ceiling occasioned by Depression spending of the 1930s, World War II, the Korean conflict, the war in Vietnam, and intermittent peacetime deficits all were permitted through extensions of the Second Liberty Bond Act. During World War II, however, there was some change in the structure of the debt ceiling. Prior to that time Congress had set individual ceilings on the various types of government indebtedness. But in 1941 Congress replaced several individual debt ceilings with a single ceiling on the total debt.

Congress has raised the debt ceiling dozens of times in the past 33 years, from $275 billion in 1954 to over $3,000 billion in fiscal 1990. On a number of occasions in the past decade, proposals to eliminate the statutory ceiling on the national debt have surfaced, and arguments for and against the debt ceiling abound. In 1969 the Nixon Administration tried to get around the ceiling problem by proposing that certain debts, especially those held by government agencies, be removed from statutory limitation. This proposal would have

granted the Treasury ample flexibility to contract more debt without having to ask Congress to raise the debt ceiling. Congress did not approve the measure. The Treasury then asked that the ceiling be eliminated altogether, and in June 1969, a group of 67 leading academic economists recommended repeal of the ceiling, but to no avail.

Arguments Against the Debt Ceiling

Opponents of the ceiling maintain that at times it may limit needed expenditures on important government programs, such as defense or depression spending, whenever tax revenues are not up to expectations or the government has failed to increase taxes sufficiently to take care of its obligations.

Opponents also claimed that a debt ceiling results in fiscal subterfuge by the Treasury. This subterfuge is possible because the statutory limit applies only to that portion of the total federal debt defined in the annual federal budget. The federal government, however, has many nonbudgetary financial obligations. For example, many federal agencies, such as the Commodity Credit Corporation, the Federal National Mortgage Association, the Postal Fund, and the Rural Electrification Fund, which normally borrowed funds from the Treasury, are already empowered to borrow from private financial institutions and investors if they desire. Frequently, when pinched for funds and approaching the debt limit, the Treasury will ask a particular agency to borrow in the financial markets rather than from the Treasury, in order to relieve the Treasury of having to borrow funds and raise the national debt to service the agency.

Most of this off-budget financing is done through the Federal Financing Bank, which raises money for other agencies. For fiscal year 1990 these agencies borrowed $68.8 billion. This figure is likely to grow to $104.6 billion by 1993.

Critics of the debt ceiling contend further that it restricts the freedom of the Treasury to manage the debt efficiently, especially when the debt is close to the ceiling. In such circumstances the Treasury may have to wait until old securities mature before issuing new ones for fear of going over the ceiling. Critics of the ceiling argue that it would be better for the Treasury to experiment with new issues sometime before the expiration of the old to test the interest rate and have time to make any necessary adjustments to obtain the best price. Otherwise the Treasury is at the mercy of the market if it must wait until the day that old issues expire before issuing new securities to replace them. Frequently it will have to pay a higher interest rate as a result.

Arguments for the Debt Ceiling

Advocates of the debt ceiling argue that it is needed to restrain government spending and prevent the national debt from getting dangerously high. Al-

though Congress seems to have liberally raised the debt ceiling in the past several years, the ceiling's presence does tend to make Congress look a bit closer at the budget and decide whether it really wants to vote for appropriations that will require borrowing and raising the debt ceiling.

It is frequently pointed out by supporters of the debt ceiling that, because the interest on the national debt exceeds $180 billion annually, the debt is costly to American taxpayers. One can also argue that insofar as the ceiling limits deficits in the annual budget, it makes the taxpayers more conscious of the total cost of government services. Many taxpayers may not balk at government expenditures of $1,166 billion when taxes are scheduled to be $1,060 billion; but if they were taxed $1,166 billion (or 10 percent) more to cover the total cost of government spending, they might very well decide to do without some government services. In short, deficits and a rising national debt can mislead the taxpayers about the true cost of government services.

INTEREST-RATE CEILING ON NATIONAL DEBT

In addition to a statutory limit on the national debt, there is also a ceiling on the rate of interest that may be paid on government securities. This interest-rate ceiling was also established by the Second Liberty Bond Act of 1917, which authorized the Treasury to issue certain amounts and kinds of bonds at interest rates up to 4 percent. Later, the Third Liberty Bond Act raised the ceiling to 4.25 percent to ensure a successful sale of that issue. From the early 1920s until the 1950s the cost of federal borrowing was far below the legal interest-rate ceiling. With the boom and inflationary conditions of the mid-1950s, however, the interest-rate ceiling became a handicap to the Treasury. With interest rates of 15 to 20 percent in the late 1970s and early 1980s, the problem became more pressing. Congress did remove the interest-rate ceiling on U.S. savings bonds, which are often purchased by individuals as a method of personal saving.

Whether the interest-rate ceiling is good or bad is a matter of judgment. Proponents maintain that it keeps down the cost of federal borrowing. Opponents claim that it prevents the Treasury from being competitive in the market for funds. Furthermore, because there is no ceiling on short-term government obligations, only on long-term bonds, critics of the ceiling maintain that in a competitive market in which the going rate of interest in the long-term market is higher than the interest-rate ceiling, it can force the Treasury into the short-term market where it will have to pay an even higher interest rate than it would in the long-term market.

Elimination of the interest-rate ceiling was a subject of debate in the 1950s and again became a debatable issue in Congress in the 1960s with the general rise in interest rates throughout the economy. In 1969, for example, the Treasury was paying interest rates of 8 percent or more for money it borrowed in the short-term market. With the then 4.25-percent ceiling, it was almost

impossible to compete for funds in the long-term market against high-grade corporate securities paying 7- to 8-percent interest. In response, the recently installed Nixon Administration asked Congress to review the 4.25-percent interest ceiling on the government's long-term securities. The problem eased somewhat in 1971 when Congress authorized the Treasury to issue as much as $10 billion in bonds at rates exceeding 4.25 percent. But problems with debt financing arose again in the late 1970s, when interest rates were rising and ultimately reached a range of 15- to 20-percent. The question of the interest-rate ceiling again came to the fore in the 1980s as the Treasury struggled to finance new annual deficits in excess of $100 billion and repay another $100 billion or more of maturing debt.

STRUCTURE OF THE NATIONAL DEBT

The national debt comprises various types of government obligations and securities, both long and short term. Table 8-2 shows these obligations and their dollar amounts.

Treasury Bills

About 15 percent of the debt is made up of Treasury bills, or T-bills, which are short-term securities with 3- to 12-month maturity dates. T-bills can be

TABLE 8-2

Total Debt by Type of Security, August 1989

	Amount (Billions)[a]		Percentage of National Debt
Total gross debt		$2,857	100%
Marketable total		1,893	66
Bills	$407		14%
Notes	1,133		40
Bonds	338		12
Nonmarketable total[b]		944	33
State & local government series	159		6
Savings bonds and notes	114		4
Government account series[c]	664		23
Foreign issues[d]	7		1
Non-interest-bearing debt		21	1

[a]Figures may not add exactly due to rounding.
[b]Includes securities issued to the Rural Electrification Administration, depository bonds, retirement plan bonds, and individual retirement bonds.
[c]Held almost entirely by U.S. Treasury agencies and trust funds.
[d]Nonmarketable dollar-denominated and foreign-currency-denominated series held by foreigners.

SOURCE: *Federal Reserve Bulletin* (March 1990).

issued as frequently as each week and are sold to obtain funds to retire portions of the debt that may become due at a given time. T-bills, such as the 91-day variety, sell at current interest rates and are sought by financial institutions as a short-term outlet for their reserve cash.

T-bills have no stated interest rate or par price. Instead, the Treasury sells them through sealed-bid auctions in which investors submit written bids at prices of their own choosing. Individual bidders may even offer to buy different amounts of an issue for different prices. Once the bids are received, they are listed in order of decreasing price and filed accordingly. Beginning with the highest price offered or bid, the Treasury sells to the successively lower bidders until the issues are all sold. Since individual bidders may pay different prices, the yield for each of them will be different, with the lowest bidders, of course, obtaining the best yield. The Treasury reserves some of the bills, however, for sale on a noncompetitive basis to small buyers for the average price of those sold through competitive bidding. Because the price of T-bills remains rather stable and they can be disposed of readily, holders generally consider them to be almost like money.

Treasury Notes

Investors who desire a higher return and are willing to wait longer for maturity dates can purchase a second form of government security, Treasury notes, which may run as long as five years. Treasury notes make up about 42 percent of the national debt. At times T-bills and Treasury notes are both sold as tax anticipatory issues, that is, the Treasury will sell them to obtain funds to tide it over until it receives anticipated tax revenues. Businesses frequently buy such issues with reserves they may be accumulating for tax payments in the immediate future. This gives the taxpayer an opportunity to earn some interest on the money being held in anticipation of tax payments. Furthermore, when the tax-payment deadline arrives, the taxpayer's tax obligation may be discharged by turning in the securities to the government.

Treasury Bonds

About 11 percent of the national debt is in the form of long-term obligations known as Treasury bonds. Payable to the bearer at a particular maturity date, these are marketable bonds, meaning that they can be bought and sold by persons other than the original holders. These bonds have maturity periods of 5, 20, and even 40 years. One issue of these bonds paying 4.25-percent interest matures in 1993; still another issue paying 3.5 percent does not mature until 1998.

These bonds are originally sold at a fixed price and a stated interest rate. One disadvantage of this method, compared to the auction technique of selling short-term government securities, is the fact that the Treasury has to set an interest rate or yield on the bond. If for some reason the yield is set too low,

the Treasury runs the risk of a financial failure if investors do not purchase the bonds. On the other hand, if the Treasury sets the interest rate too high, it may pay an unnecessarily generous rate of interest to the investors. Holders clip off the coupons attached to the bonds and turn them in to the Treasury, or a designated agent, periodically in exchange for interest payments. Although they are issued and sold at a fixed price and a stated interest rate, the market price of the bonds fluctuates as they are bought and resold in the bond market.

Usually when market interest rates are higher than the coupon rate, Treasury bonds will sell in the market at a discount, in effect raising the real rate of interest, or yield, on the bonds. When market interest rates are lower, the bonds will sell at a premium, which in turn lowers the yield on the bonds. Because the holder at maturity date always receives the full face value of a bond, its resale market price will move closer to the maturity value of the bond. As a result of the relatively low interest-rate ceiling on these bonds their sale has been declining in recent years. They now constitute about 11 percent of the federal debt, compared to one-third of the debt in 1965.

Savings Bonds

Another instrument of national debt is the savings bond, which has been issued in large amounts since the beginning of World War II. Often purchased through payroll-deduction plans, savings bonds make up about 4 percent of the total debt. These securities are nonmarketable, meaning they can be cashed only by the person to whom they are issued. Two series of bonds—EE and HH—are currently available. Series EE bonds sell for a price less than their maturity value, and interest accumulates in the form of the higher value on the bond when it matures. Series EE bonds have ten-year maturities, but they can be redeemed for cash at any time after 60 days, either at the Treasury or through banks. Series HH bonds are purchased at face value and pay interest semiannually in the form of a check sent directly to the bondholder. Series HH bonds have a ten-year maturity.

Government Account Series

Another important part of the debt is the government account series, issues of which are reserved for government agencies and trust funds. These are issued to federal government investment accounts and comprise about 18 percent of the federal debt. The Federal Old-Age and Survivors Insurance trust fund, for example, has certain revenues from the collection of Social Security taxes that it does not need immediately. These are deposited with the Treasury in exchange for special-issue government obligations. When the Social Security Administration needs funds, the government obligations are redeemed by the Treasury and the cash is transmitted to the appropriate trust fund. This

arrangement provides a source of funds for the Treasury and, at the same time, a source of investment for the trust fund. Interest receipts on the special issues, of course, help to pay some of the cost of Social Security.

Foreign Series

The Treasury issues two types of special nonmarketable securities to foreign governments and monetary authorities. One is a dollar-denominated security designated "Foreign Series." The other is the "Foreign Currency Series," which is denominated in the currency of the country or institution making the purchase. Currently, about $6.6 billion of the foreign series (dollar-denominated and foreign-currency denominated) are still outstanding.

Maturity Dates of the Debt

Another interesting aspect of the national debt, especially in regard to repayment or refunding, is that different portions of the debt mature at different times. As of February 1989, for example, more than 34 percent of the total debt was due within one year, another 36 percent was due in one to five years, and the remainder was stretched out over a 20-year period. An additional $108 billion in savings bonds can be redeemed at the will of holders.

When due, most of the debt is refunded rather than paid off, either by offering existing debt holders new securities in exchange for the old or by selling securities to new debt holders to pay off the old. To this extent, it means that debt payments and reduction are merely postponed. Many of the new issued offered to replace the old are obligations of one year or less. Consequently, the Treasury is faced with the chronic problem of refunding a large portion of the national debt.

FEDERAL BUDGET AS AN ECONOMIC STABILIZER

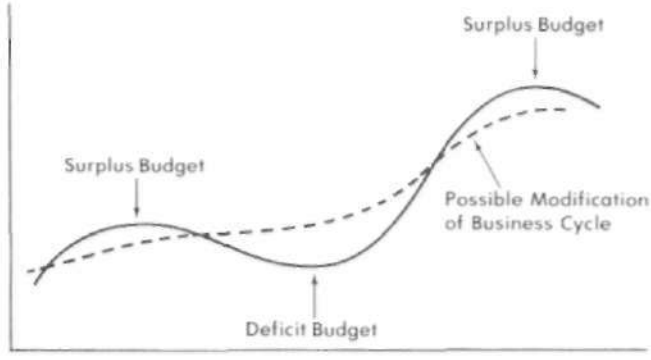
If used properly, debt policy can help to stabilize the economy and modify business cycles. A surplus budget can help prevent inflation during a prosperity period, and a deficit budget can help boost the level of economic activity during a depressionary period. Use of a budgetary policy is shown in Figure 8-1.

Balancing the Budget over the Cycle

When the budget is used as a tool for economic stabilization, it is desirable to balance the budget over the period of the business cycle. To accomplish this, it would be necessary for the surplus accumulated during a period of prosperity

FIGURE 8-1

Budget Used as an Anticyclical Device



to equal the deficit acquired during the adjacent recession. In practice, however, this balance is difficult to accomplish. And the question arises as to whether the country should try to (a) build up a surplus during prosperity and then spend it during the next recession or (b) incur the deficit during the recession and repay the debt with the surplus obtained during subsequent prosperity.

Assuming that the surplus-first method was utilized, a second problem would arise. How much surplus would need to be accumulated during the prosperity period? The answer would depend not only on the level of inflation during prosperity but also on the estimated deficit for the subsequent recession. It is practically impossible, however, to determine the duration and the intensity of either the period of prosperity or the subsequent recession. For that reason, policymakers usually suggest running the deficit first, then accumulating the surplus to pay for it. But this suggestion also has weaknesses. For one thing, how can the country be assured that a subsequent period of prosperity will be long enough or strong enough to permit the accumulation of sufficient surplus to pay off the deficit incurred in the previous period of recession?

Another weakness of the deficit-first method is that most administrators and legislators are willing to use deficit spending during a recession to help alleviate unemployment, but many of them are reluctant to support measures to accumulate the offsetting surplus during prosperity years. From a political point of view, the emphasis is often on tax reduction rather than higher taxes during a prosperity period, especially if there should be a surplus in the federal budget. In short, deficit spending when used to bolster the level of economic activity can be very popular with the public during a recession, but increased

taxes and budget surpluses to combat inflation during a prosperity period are seldom popular.

Moreover, a surplus acquired during a prosperity period should be held in reserve for best results. It can be used to pay off the debt subsequently, but not until the level of economic activity begins to decline. If the surplus obtained during prosperity is used immediately to pay off the debt incurred by the deficit spending of the recession, it will merely result in putting back into the economy an amount of money equivalent to the surplus. Thus, the reduction of spendable incomes through taxation will be offset by government expenditures plus debt repayment.

In other words, the total amount of spending in the economy will remain the same, provided the recipients of debt repayment spend or invest the money received from the government. In such a case, the surplus budget will have a neutral effect instead of being anti-inflationary. The better practice would be to hold the surplus funds until economic activity begins to decline. Repayment of the debt at such a time could give a boost to the economy when recipients of debt repayment spend or invest these funds.

The Full-Employment Budget

In recent years there has been a tendency to look at the *full-employment budget* instead of the actual budget for the purpose of analyzing the fiscal effects of the budget. Regardless of the state of the actual budget, the full-employment budget is a measure of the potential government revenue and expenditure that would result from full employment. Some analysts say that the actual budget may be misleading. For example, assume that the existing budget shows a deficit (or fiscal stimulus) of $30 billion and that the rate of unemployment is 6 percent. Projection may indicate that if the economy were at full employment (5-percent unemployment or less), the budget would show a surplus of $8 billion. Thus, if the economy expands toward the full-employment level, it will encounter a fiscal drag in the form of a surplus, which will impede the attainment of full employment.

Proponents of "functional finance," who look at the budget as a tool of stabilization and growth rather than as something to be balanced annually or even periodically, would contend that the inherent drag of the full-employment surplus should be eliminated if the economy is to attain its goal of full employment. They would eliminate the drag, of course, by increasing the size of the current fiscal stimulus (deficit) through reducing taxes or by increasing government spending.

Carrying the analysis one step further, proponents of this theory claim that once full employment and a balanced budget have been reached, care must be taken to prevent the development of a subsequent surplus (fiscal drag on the economy). It is pointed out that with a given tax rate, total revenues will increase by $20 billion or more annually as a result of the normal forces of

growth in our economy. To prevent this from occurring, it is suggested that a *fiscal dividend* be declared in the form of either a tax reduction or an increase in federal spending. Advocates of the full-employment balanced budget approach give little weight to the notion the surpluses should be accumulated during prosperity to offset the deficits of previous periods.

President Carter used this type of budgeting in 1980. It showed deficits (fiscal stimuli) for 1980 and 1981 with a surplus of $4.8 billion for 1982, resulting from the two-year fiscal stimulus.

Although President Carter's budget missed the target, President Reagan used a similar type of budgeting. Starting with an assumed deficit of $54.5 billion for 1981, planned budget deficits were to decrease to $45 billion and $23 billion respectively in the next two years, producing a surplus of $0.5 billion in 1984, followed by larger surpluses in 1985 and 1986. Unfortunately, the deficit mushroomed to $208 billion in 1983. The deficit dropped to $185 billion in 1985 but was back up to over $200 billion both in 1985 and 1986. This type of budgeting, of course, assumes that Congress will go along with the figures and that everything will develop as planned with no substantial changes in the economy other than those forecast. Thus far, however, it appears that the concept of full-employment budgeting has not been successful.

PROBLEMS OF THE DEBT

The country's experience with budgetary policy as a means of stabilizing business activity is rather limited. It is therefore difficult to determine whether one can estimate the timing and size of deficits and surpluses accurately enough to use them as stabilizers of the economy. Furthermore, policymakers have not had sufficient experience in the past 40 years to determine whether, in the absence of emergencies, the deficits and the surpluses can offset each other sufficiently to prevent a growing debt. The U.S. incurred a sizable debt during the Depression of the 1930s as a result of a deficit spending program. Without having had a chance to diminish this debt, it entered World War II, which increased the debt to about $280 billion.

The country's opportunity to reduce the debt was further hampered by the outbreak of the Korean conflict in 1950. Since then, the U.S. has made very little headway in reducing the debt. In fact, the national debt, now at nearly $3 trillion, has grown to such proportions that it presents several problems. Bankruptcy, redistribution of income, debt burden, size of the debt, refunding, and the burden of interest payments are a few of these problems.

Bankruptcy

Persons untrained in economics often incorrectly believe that the national debt may become so large that it will bankrupt the nation. They worry that the

government may get into a situation where it will be unable to pay the debt. This misunderstanding arises from not understanding clearly that government financing is very different from normal business financing. When the government borrows and repays funds, the transactions are more like those taking place between members of a family than between private businesses.

Comparison to Business Debt. From an accounting point of view, whenever a business has total financial liabilities in excess of total assets, it is insolvent. In other words, it does not have enough to pay its current debts in the immediate future. When creditors press for payment, the firm may voluntarily and legally have itself declared bankrupt, or the creditors may force it to do so. In either case, a court will decide whether the business should continue under receivership, that is, under a court-appointed manager, or whether the assets of the company should be liquidated to pay off the creditors. Whenever the firm pays off its debt, it decreases the total assets of the company. Money paid out actually leaves the firm, thereby reducing the assets.

Comparison to Family Debt. The national debt is actually more like an internal family debt than a business debt. First consider all members of a family as forming a single spending unit. Then suppose that a daughter borrows $900 from her father over the period of the school year and that she intends to repay it from the money she earns from summer employment. When she borrows, she does so within the family unit. Likewise, when she repays the $900, the money remains within the family.

When the daughter pays her debt, her individual assets are decreased by $900, but her father's assets are increased by $900. Therefore, the net assets of the family remain the same. Unlike the debt repayment of the firm, in the family situation no money leaves the family as a result of the debt repayment. There is merely a transfer of cash (assets) from one member of the family to another. There is no net reduction of assets, nor is there any money leaving the family.

The Federal Debt. When the federal government borrows money, it does so primarily from individuals, businesses, and banks within the economy. When it repays part of the debt, the money stays within the economy, whose total assets remain the same. Furthermore, the government's ability to repay depends on the total assets of the economy or, more immediately, on the total income of the economy and the government's ability to tax. For example, the national debt in 1989 was $2,869 billion. Considering that the gross national product (GNP) for 1989 was over $5,000 billion and that the total national income was about $4,300 billion, it is easy to see that the total income of the nation was sufficient to take care of debt repayment if the government decided to raise taxes sufficiently to obtain the funds required to pay it off. Theoretically, if unrealistically, the government could tax a sufficient amount to pay the debt off in the course of one year. If the government were to do this, it

would not in any way reduce the total income or assets of the nation as a whole. The taxation and repayment of the debt would merely cause a redistribution of income, or cash assets, inside the economy. The income given up by individuals and firms in the form of taxes would be offset by payment to those holding the debt. Thus, the total income or assets of the economy would, after payment of the debt, remain the same as before . The major difference would be that income and cash assets held by various individuals and firms would be changed. Foreigners, however, now hold 13 percent of the national debt, compared to less than 5 percent as late as 1970. Repayment of U.S. debt held by foreigners would therefore reduce total U.S. assets.

Although a tax rate sufficient to pay off the debt in one year would be prohibitive, certainly over a relatively long period the government could operate at a surplus sufficient to pay off the debt. Surpluses obtained during periods of prosperity could be used to pay the debt during periods of contraction in the economy. As far as ability to pay is concerned, in a ten-year period, for example, a national income of over $50 trillion (in 1990 dollars) would be available to repay a $3 trillion debt.

Effect on Redistribution of Income

The question naturally arises: Why does the government not take more positive steps to pay off the debt? Politicians are reluctant to reduce the debt by sizable amounts not only because the larger tax burdens or budget cuts necessary to do so would be politically unpopular but because doing so would disrupt the economy. One of the more important disruptions would be redistribution of income.

If a large portion of the debt were paid off in a short period of time, heavy taxes to finance the repayment would reduce demand for goods and services, especially among lower-income groups. Whether such reductions in demand would be offset when the government used tax money to pay off the debt would depend on what the recipients of debt repayments did with the money they received. Because it is probable that the debt holders who receive repayment would be less likely to consume or to invest than taxpayers as a whole, the economy's net demand for goods and services could easily decline in response to repayment of the debt. The likelihood of this scenario becomes evident when one looks at who owns the debt. As shown in Table 8-3, lower-income groups do not hold much of the federal debt; rather, it is held primarily by banks, businesses, government agencies, and individuals in the higher-income groups.

Of course, if the debt holders would spend the money owed them at the time they received it, repayment would not adversely affect the economy. Such would be the case, for example, if the debts were repaid during a full-employment period. It would be best, however, to pay off the debt during periods of less than full employment, using the money obtained through taxation during

TABLE 8-3

Ownership of the U.S. National Debt, 1989 (Percentage)

U.S. government agencies and trust funds		23.7%
Federal reserve banks		7.9
Private investors		68.4
Commercial banks	7.4%	
Money market funds	0.4	
Insurance companies	4.1	
Other companies	3.2	
State and local governments	11.6	
Individuals	7.3	
Foreign and international	13.8	
Miscellaneous[a]	21.6	
TOTAL		100%

[a]Includes savings and loans associations, nonprofit institutions, credit unions, corporate pension funds, and certain U.S. government deposit accounts.

SOURCE: *Federal Reserve Bulletin (March 1990).*

a prosperous inflationary period. In this way, debt retirement could be used as a tool for economic stabilization.

Burden of the Debt

Many people believe that when the national debt is not paid during the period in which it is incurred, the burden of paying it passes on to future generations. The extent to which this may be true depends upon whether one considers the effect of that obligation on the total economy or on individuals and firms. It also depends on the source of the debt.

Effect on the Total Economy. If one considers the total economy, it is impossible to pass on the real cost of the debt to future generations because the real cost of the debt is the cost of the goods and services that individuals and firms forego when they buy government bonds. That cost is borne immediately, not in the future. When consumers and investors purchase bonds, they not only buy fewer goods and services, but they also give the government revenue to make its purchases. For example, during World War II, citizens and firms gave up the purchase of automobiles, homes, food, clothing, machinery, raw materials, and the like when they purchased bonds. In the meantime the government, with its borrowed purchasing power, bought tanks, planes, ships, ammunition, and other necessary war materials. The decrease in consumer production was, in effect, the real cost of the debt. The people in the economy at the time the debt was incurred shouldered the real burden of the debt through the loss of goods and services.

For the economy as a whole the debt repayment, whether repaid immediately or postponed until future generations, does not cost anything in terms of goods and services. As a result of the redistribution of income that takes place at the time the debt is repaid, some individuals and firms may suffer a loss of purchasing power; but this will be offset by gains to others, and no net decrease in purchasing power in the economy will take place. For example, if the 1990 debt were to be paid even in a period of one year, the total tax necessary to do so would be over $3 trillion. A tax of this size would decrease the purchasing power of taxpayers, resulting in reduced demand and decreased production. The government's $3 trillion payment to debt holders, however, would tend to offset the adverse effect of the tax. Total purchasing power, demand, and production would all remain the same, provided the debt holders were as likely to consume and to invest as taxpayers in general. In that event, there would be no loss of total goods and services at the time the debt was repaid. Thus, in the sense that there is no cost or loss for the economy as a whole when the debt is repaid, it is impossible to pass the burden of paying it on to future generations.

Effect on Individuals. If the government were to pay off the debt in a relatively short period, say within the generation in which it occurred, the particular individuals taxed to pay the debt would have to give up purchasing power and to that extent would be burdened personally with the cost of the debt. If payment on the debt were postponed for a generation or two, however, the tax burden would fall to a large extent on the descendants of those individuals and businesses in the economy at the time the debt was incurred. Thus, even though the net cost or burden of the debt cannot be passed on to future generations, the individual burden can be passed on.

For example, during the mid-1980s, the United States incurred a sizable debt. If the debt were paid off within the generation in which it was incurred, Frank Delgado, a taxpayer of the period, might have to pay $2,000 in taxes to provide the government with the money to repay Heather Morgan, who, we will assume, is a holder of bonds and therefore an owner of the debt. This payment would decrease the purchasing power of Mr. Delgado and would increase the purchasing power of Ms. Morgan.

If debt repayment were postponed until 2000, however, Mr. Delgado's niece or someone else in the economy would have to pay the taxes. The individual burden of the debt would have been passed on from Mr. Delgado to someone in a subsequent generation. Ms. Morgan, who made a personal sacrifice to lend the government money in return for the bonds, would be deprived of repayment until a later date. In fact, if she passed away, her descendants, not Ms. Morgan, would receive the individual gain at the time repayment was made. In actual practice, however, Ms. Morgan could at any time eliminate this situation by transferring her ownership of the debt to someone else by selling the bonds.

Furthermore, even if the debt were passed on to future generations, one can argue that because they receive some benefits as a result of debt, they should help repay it. Future generations, for example, reap certain benefits from the use of hospitals, schools, dams, highways, and medical and other research financed through deficit spending.

Effect on the Money Supply. Another problem involved in the repayment of the national debt, which tends to strengthen the reluctance to pay it off, is the effect of doing so on the money supply. When an individual or a business loans the government money, there is no increase in the money supply. For example, if Mr. Pulaski buys a bond for $1,000, he generally will pay cash for it. Therefore, there is merely a transfer of cash from the individual to the government, with no change in the total money supply. If a bank lends the government money, however, it can pay for the bonds in cash or through the creation of a demand deposit (checking account) against which the government writes checks. Demand deposits brought about by the creation of credit increase the money supply because they are considered as money and can be used to make purchases. Therefore, if a bank were to buy $2.5 million worth of bonds and pay for them by using a demand deposit, it would increase the money supply accordingly. This process is referred to as *monetizing the debt.*

Changes in the money supply can affect the level of economic activity or of prices or both. When the government goes into debt by borrowing from the banks, it increases the money supply and thus increases the level of economic activity and/or prices.

Since 1980, the money supply has increased from $412 billion to $787 billion, a large portion of which came into existence as a result of the sale of government bonds to the Federal Reserve and commercial banks. Therefore, the national debt today is supporting a sizable part of the total money supply.

A decrease in the money supply tends to decrease the level of economic activity and/or the price level unless it is offset by some other force, such as an increase in the velocity or turnover of money. Just as the debt was monetized when the government borrowed from the banks, the money supply will be decreased when the debt is paid off. This is known as *demonetizing the debt.* For example, if the government redeemed the $100 million in bonds held by the banks, demand deposits would be reduced by that amount and the money supply reduced accordingly. Thus, if the government were to reduce the national debt by sizable amounts over a relatively short period of time, it could reduce the money supply to such an extent as to have an adverse effect on the level of economic activity. Payment of that portion of the debt supported by the bank credit would be beneficial during a period of full employment because it would reduce inflationary pressures, but during periods of less than full employment such debt repayment could be harmful to the economy.

Under these circumstances it is difficult for the United States Treasury to sell new bonds at 4.25 percent when existing bonds yielding more than 10 percent can be purchased in the open market. It is for this reason that the Treasury Department occasionally requests that the 4.25-percent interest-rate ceiling on long-term government bonds be removed to permit the selling of long-term government bonds at a higher interest rate. Because Congress has generally refused to grant this request, the Treasury is forced to sell short-term government obligations on which there is no interest-rate ceiling.

When the Treasury redeems the matured bonds in this manner, the total cost of the debt increases because the interest rate on the new obligation is higher than that on the refunded portion of the debt. Furthermore, the government puts itself in a position where it must pay off or refund again this portion of the debt in another relatively short period. If the Treasury Department were able to issue long-term securities at a competitive interest rate, it would prolong the payment or refunding date for 15, 20, or even 30 years. On the other hand, there could be times when the debt might be refunded at a lower cost. The situation on refunding worsened in the 1970s, however. In 1979, for example, the Treasury was at times paying more than 14 percent to refund billions of dollars of debt coming due at that time. Fortunately, the rate paid on many government securities dropped below 10 percent by late 1982, and was below 7 percent by 1986. It rose back to more than 9 percent in 1989.

Burden of Interest Payments

Included each year in the federal budget is $235 billion or more for payment of interest on the national debt. This amount is offset in part by about $70 billion in interest income to various trust funds, leaving a net interest payment of $165 billion, a sizable sum. Although taxation for the payment of this interest does not impose a net burden or cost on the economy as a whole, it does cause an annual redistribution of income and, therefore, a specific burden to individuals and firms in the economy. If the government had originally increased taxes instead of going into debt, or if the government had paid off the debt shortly after it had been incurred, it would have imposed a smaller total burden on individuals than it does when the debt repayment is postponed. With postponement of the current debt, the total redistribution of income necessary to retire the debt is not only in excess of $3 trillion, the principal amount, but also $160 billion or more annually for net interest on the debt.

In the last six years, 1984–1989, the net interest burden has been more than $840 billion because the debt has been outstanding. It is a matter of judgment whether individuals and firms would prefer the hardship of paying off the debt in a relatively short period or giving up more total income but spreading the hardship over a longer period of time. Some economists have also suggested that some type of interest-free financing for federal borrowing would ease the debt burden.

The Balanced Budget Amendment

In the hope of halting deficits and stemming the growth of the national debt, a Constitutional Amendment requiring a balanced budget was introduced in the House of Representatives in October 1982. Although the vote was 236 to 187 in favor of the amendment, it did not obtain the two-thirds majority needed for passage. At the same time, 31 of the 34 states needed to call a Constitutional Convention indicated a desire to do so for the purpose of drafting a balanced-budget amendment.

Subsequently, in order to limit debt accumulation, Congress enacted the Balanced Budget and Emergency Deficit Control Act of 1985 (the so-called Gramm-Rudmann-Hollings Act). This act called for the federal government to reduce the federal deficit each year and finally produce a balanced budget by 1991.

The act was amended in 1987 and the target date for the balanced budget moved out to 1993. The new target dates and amounts needed to reach a balanced budget are shown in Table 8-4.

The bottom of Table 8-4 shows that the government plans to reach a balanced budget by the target date. Nevertheless, President Reagan and others as late as 1988 were still seeking support for a balanced budget amendment and a Presidential line item veto. Moreover, President Bush made a campaign pledge to seek both of these objectives.

TABLE 8-4

GRH Deficit Reduction Targets

Years	Deficit Target
1990	$100 billion
1991	64 billion
1992	28 billion
1993	0 billion

SOURCE: *Economic Report of the President* (1990).

CONCLUSION

It is unlikely that the national debt will be reduced by any substantial amount in the near future. In 1982 Congress removed the interest-rate ceiling on Savings Bonds. In 1985 it passed the Gramm-Rudman-Hollings Act requiring

that the federal deficit be narrowed to zero by 1991. In 1986 it increased to $250 billion the amount of long-term bonds the Treasury could sell without regard to the statutory 4.25 interest-rate ceiling. In August 1989, the Treasury asked Congress to raise the ceiling on the national debt to over $3,000 billion. The increase was needed to finance the expected deficit for 1990.

In March 1990, the Chairman of the House Ways and Means Committee, Dan Rostenkowski, proposed a bill to reduce the federal deficit over the next five years. His proposal contained a provision for increasing marginal income tax rates from 28 percent to 33 percent and a one-year freeze on Social Security benefit payments. President Bush indicated that the proposal may be worth studying and that he did not want to be inflexible on any plan to reduce the deficit and bring about a balanced budget.

In spring 1990 some members of Congress and others discussed using the so-called "peace-dividend"—the possible reduction in defense spending resulting from troop and armaments reductions in Western Europe—to lower the federal deficit.

In 1990 President Bush proposed the establishment of a Social-Security-Integrity-and-Debt-Reduction Fund designed to insure that expected Social Security surpluses are not spent for purposes other than to accumulate Social Security reserves.

Obviously the problems of the national debt will continue. The issues may become more or less pressing, depending on economic measures adopted in the future to alleviate the problems of the debt. Since it does not appear that the debt is going to be repaid any time soon, the most we can hope for is that future increments in the debt will be less than the additions to the national income, which would reduce the relative burden of the debt. Perhaps if the balanced budget target is reached, a small amount of surplus thereafter could be designated for debt reduction.

QUESTIONS FOR DISCUSSION

1. Will the national debt bankrupt the nation?
2. Should the national debt be paid off either in part or in full?
3. Should the statutory ceiling on the national debt be removed or tightened?
4. Should our national debt be financed through interest-free financing, that is, by sale of non-interest-bearing bonds to the banks?
5. Should the interest-rate ceiling on the national debt be removed?
6. Do you recommend that the government avoid going into debt by printing more currency to cover its expenses?

7. Should the federal budget be used as a device for stabilizing the economy?
8. What do you think of the "full-employment budget" concept?
9. Would it be feasible for the government to issue shares of stock in the U.S. economy and declare dividends each year, instead of selling bonds and paying interest on them?
10. Do you favor the idea of a balanced budget and a Presidential line item veto?

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9

HEALTH CARE

WILL IT BANKRUPT US?

One of the most difficult problems facing the American people in the years ahead is that of meeting their medical expenses. Increased demand for improved health care and lack of sufficient funds to pay for sharply rising health costs have made health care a critical economic issue for health-care consumers and suppliers, employers, private health insurers, and public agencies.

In the 1960s, when President Johnson initiated his Great Society, Americans were told that health care was a right and not merely a privilege for those who could afford it. The passage of the Medicare and Medicaid programs in 1965 was seen by many as but the first step in arriving at a national health-insurance program guaranteeing "cradle-to-grave" protection against catastrophic health-care costs.[1]

Today, the nature of the health-care debate is decidedly different. National health insurance is, if not a dead issue, certainly a comatose one. Rather than promising comprehensive health care, policymakers in Washington are now

1. For summaries of major national health-insurance proposals offered in the 1970s, see the fifth edition of this text.

warning of the possibility of "rationing" it. Federal and state budgets strain to meet the demands that existing programs are exerting on them.

SCOPE OF THE PROBLEM

In the broadest view, four out of five people have some form of illness each year. Of those who become ill, one out of seven is incapacitated for more than 90 days. In addition, there are 350,000 citizens who suffer permanent disability each year. Approximately one person out of every three families is hospitalized annually, and an estimated 60 percent of these people require surgery. The cost of this care is astounding. Over 500,000 families will have medical bills in excess of six-month earnings, while nearly seven million families will have out-of-pocket medical expenses exceeding 15 percent of their annual income.

In 1988, more than 31 million Americans were without medical insurance of any kind, either public or private. During the same year, it is estimated that another 15 million people had inadequate insurance coverage. Keeping these figures in mind, it should not be surprising to discover that close to 50 percent of all personal bankruptcies each year are the result of medical debts.

The essential problem of medical care today is how to pay the bill when costs are soaring. The United States is the only industrialized nation without a universal health-insurance program, yet spending is greater for health care on a per capita basis than in any other country. Table 9-1 presents data on national health expenditures for selected years. In 1986, Americans paid approximately $458 billion for medical care. This sum represents an 84-percent increase over what was paid in 1980 and a 510-percent increase over the level of health expenditures in 1970. Table 9-1 reveals that hospital care accounted for $180 billion of the projected $458 billion spent in 1986. The second highest expenditure was for the services of physicians, which totaled nearly $92 billion. Expenditures for hospital care and physicians' services are the components of medical care that are experiencing the greatest cost pressures.

On a per capita basis, America's medical bill has climbed relentlessly during the past three decades. In 1950, per capita national health expenditures stood at $82. By 1986 per capita expenditures were estimated to be $1,837.

Figure 9-1 depicts national health expenditures as a percentage of gross national product for selected years. The percentage of GNP attributed to health care has risen from 4.4 percent in 1950 to an estimated 11.1 percent in 1987. The mere size of the health-care industry is indicative of the scope of the economic problem.

OUR PRESENT HEALTH-CARE SYSTEM

Americans pay for their medical care in a combination of ways. In addition to direct or out-of-pocket payments, many individuals and families purchase

TABLE 9-1

National Health Expenditures for Selected Years
(In billions of dollars)

Type of Expenditure	1950	1960	1970	1980	1986
Health services and supplies					
Personal health care	10.9	23.7	65.4	219.1	404.0
Hospital care	3.9	9.0	27.8	101.3	179.6
Physicians' services	2.7	5.7	14.3	46.8	92.0
Dentists' services	1.0	2.0	4.7	15.4	29.6
Other professional services	0.4	0.9	1.6	5.6	14.1
Drugs and medical sundries	1.7	3.7	8.2	18.5	30.6
Eyeglasses and appliances	0.5	0.8	2.0	5.1	8.2
Nursing home care	0.2	0.5	4.7	20.4	38.1
Program administration and net cost of insurance	0.5	1.0	2.8	9.2	24.5
Government public health activities	0.4	0.4	1.4	7.7	13.4
Research and construction of medical facilities	0.9	1.7	5.3	11.9	16.2
Research	0.1	0.7	1.9	5.4	8.2
Construction	0.8	1.0	3.4	6.5	8.0
TOTAL	12.7	26.8	74.9	248.0	458.2

SOURCE: *Health Care Financing Review* (Spring 1989) and *Statistical Abstract of the United States* (various years).

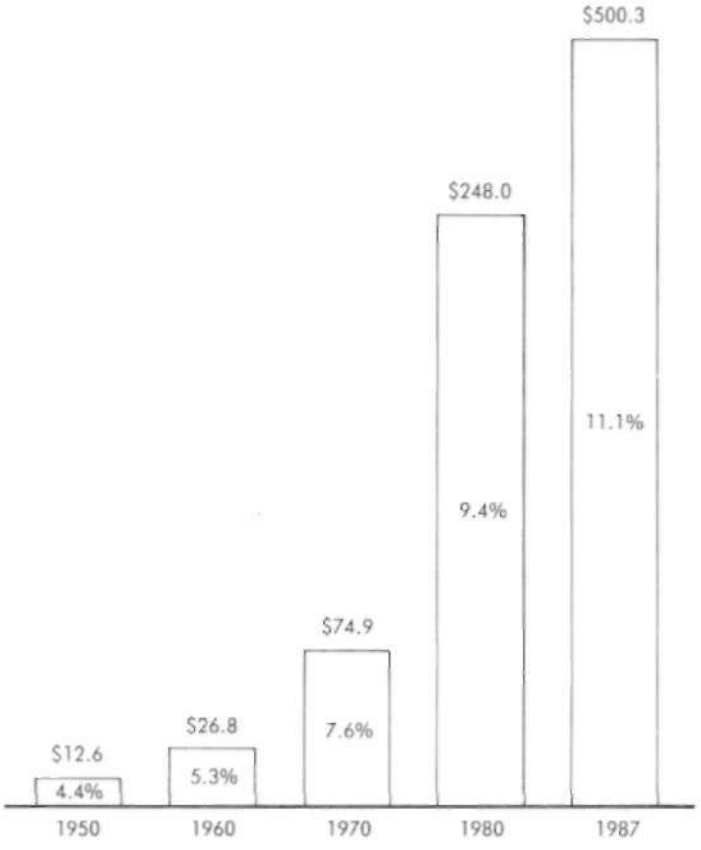
medical insurance in the form of individual or group plans. Because of the high cost of medical care, a fairly high level of income is required to make direct payments or to purchase insurance. Unless totally or partially employer-paid group insurance is provided, insurance is unaffordable for many people. To extend the availability of proper medical attention, Congress in 1965 passed two major health programs—Medicare and Medicaid. Medicare is for those over 65 years of age or eligible for Social Security disability benefits. Medicaid is provided for those who qualify as medically poor.

Medicare

The Medicare plan (Title 18 of the Social Security Act), which began paying benefits on July 1, 1966, covers almost everyone over 65 years of age. The plan comprises two kinds of health insurance: hospital insurance, which is financed by a compulsory payroll tax on all employees covered by Social Security, and medical insurance, which is voluntary.

FIGURE 9-1

National Health Expenditures as a Percentage of Gross National Product
(In billions of dollars)



SOURCE: *Health Care Financing Review* (Spring 1989) and *Statistical Abstract of the United States* (various years).

The benefits of hospital insurance (Part A) include partial payment for up to 90 days of inpatient hospital care, 100 days in a skilled-nursing facility, and an unlimited number of home health service visits by medical personnel other than doctors. These benefits are the maximums for each benefit period, which is defined as the period from the first day of hospital treatment through 60 days after release from the hospital or skilled-nursing facility. In addition, each person is eligible for a "lifetime reserve" of 60 days of hospital care that can

be applied to situations in which the number of hospital days during a benefit period exceeds 90.

In 1990, for each of the first 60 days, hospital insurance covered all inpatient hospital costs after the patient paid the first $592. For days 61 through 90, the patient's share of the cost was $148 per day. The patient had to pay $296 a day for each of the lifetime-reserve days. Costs covered by insurance included bed and board in a semiprivate room, ordinary nursing services, drugs, supplies, and diagnostic services. Medicare covered the total costs for the first 20 days in a skilled-nursing facility. For days 21 through 100, the patient's share of the cost was $74 per day in 1990.

The benefits of medical insurance (Part B) are financed by voluntary monthly premiums for those who wish to be covered. Premiums are deducted from the Social Security benefit checks of those who participate. The federal government matches the payments from general tax revenues. Monthly premiums rose from $3 in 1966 to $28.60 in 1990. The medical-insurance program pays 80 percent of Medicare-recognized charges for covered services, except for the first $75 in a calendar year. Services covered include physicians' and surgeons' services, home-health visits, diagnostic tests, and other health services, regardless of where rendered.

In 1990 about 32 million persons were enrolled in the Medicare hospital-insurance program, and of those, nearly all were enrolled in the medical-insurance program. On an annual basis, Medicare has grown from a $3.3 billion program at its inception to an estimated $100 billion program in 1990.

Medicare Catastrophic Coverage Act of 1988

Along with steadily increasing costs, the Medicare program has undergone numerous changes. But despite these changes, major gaps have continued in health-care coverage for senior citizens. In an attempt to close these gaps, particularly in coverage for catastrophic illnesses, Congress passed new legislation in 1988. The Medicare Catastrophic Coverage Act was signed into law on July 1, 1988, and its enactment marked the largest expansion in the Medicare program's history. It was also the most controversial.

The act offered expanded benefits for hospital coverage, skilled-nursing care, home-health care, respite care, and prescription drugs. Some benefits became available in 1989; others were scheduled for later years.

Beginning in 1989 Medicare beneficiaries paid one annual deductible premium of $600 for full hospital coverage, no matter how many hospital stays a patient incurred throughout the year. Also, extended-care services provided by skilled-nursing facilities no longer required hospitalization prior to admission in order for the patient to receive benefits. Patients were covered for 150 days a year with co-payment of 20 percent of the average daily cost of the first eight days. Home-health care and hospice care were expanded as well. Patients were eligible for 38 days of skilled-nursing care per year in the home, and the

number of days of hospice care was no longer limited. Co-insurance was limited to 5 percent of hospice charges.

Prescription drugs were also covered under the new provisions. Under the 1988 act, 50 percent of the cost of intravenous drugs used at home and 50 percent of the cost of all prescription drugs were covered, with coverage increasing to 80 percent in 1993. No changes in coverage were enacted for doctors' fees. However, the 1988 act did place a cap of $1,370 on out-of-pocket expenses for physicians' care, and this cap of $1,370 per year could be applied to the amount patients pay out-of-pocket in the form of co-payments and deductibles.

The controversial aspect of the Medicare Catastrophic Coverage Act concerned the cost of increased benefits to senior citizens. By 1989, Part B premiums had risen to $31.90 per month, a $7.10 increase from the previous year and the largest single increase in the program's history. Of the $7.10 increase, $4 per month was attributed to the 1988 act, with the remainder attributed to higher costs for the same coverage. Along with annual increases to cover rising costs, the premium increase due to the Medicare Catastrophic Coverage Act was scheduled to gradually grow to $10.20 per month in 1993. By 1993, it is estimated that the yearly premiums for Part B (including the new drug premium) will have risen to $571 from the 1988 premium level of $297.

In addition, the bill also added a supplemental premium to be paid by senior citizens who pay income tax. The supplemental premium affected only 40 percent of single beneficiaries with incomes above $15,000 and couples with incomes above $20,000. The additional premium amounted to $22 for every $150 of income tax owed in 1989. The maximum supplemental premium in 1989 was $800 for an individual and $1,600 for a couple, rising to $1,050 per individual and $2,100 per couple in 1993.

The Medicare Catastrophic Coverage Act was repealed in 1989 and its provisions withdrawn on January 1, 1990. The only benefits preserved from the 1988 act were two major additions to state Medicaid programs. Congress repealed the act in response to sharp criticism on the part of millions of senior citizens. Despite its many improvements in health care, senior citizens strongly objected to paying higher premiums for benefits. They also registered their dissatisfaction with the act's failure to include financial assistance for long-term custodial care in nursing homes. Pressure continues to mount in Washington for additional health-care coverage for senior citizens and additional legislation is likely in the 1990s.

Medicaid

Medicaid (Title 19 of the Social Security Act) is a medical-assistance program rather than an insurance program. A federal-state program administered by the states individually, Medicaid is financed by a combination of federal general revenues and state and local taxes. The federal share of Medicaid programs in a given state is derived from a formula based on the state's per capita income.

Each state determines its eligibility requirements and operating rules under broad federal guidelines. Thus, the number of people eligible and types of benefits received vary considerably from state to state.

The medical-assistance program (Medicaid) was designed to help unify the nation's health care by providing the medically poor (those with enough money for daily needs but not enough to pay for health care) comparable benefits to those of welfare recipients. After some states defined income levels for the medically poor at unrealistically high levels, Congress (in 1969) set income levels for Medicaid at 133 percent of the income level needed to qualify for welfare payments under Aid to Families with Dependent Children.

The manner in which Medicaid is implemented has resulted in wide variations in the amount, quality, and types of services provided among the various states. According to federal law, states having Medicaid programs are required to provide care to those who are enrolled in the two major programs of federally aided cash welfare assistance—Aid to Families with Dependent Children (AFDC) and Supplementary Security Income (SSI) for the aged, blind, and disabled. Other individuals may or may not be included, depending on the type of state program. The major groups that tend to be excluded from the Medicaid program are nondisabled poor adults under age 65 and children in intact families with an employed father in the home.

Not only does coverage vary among states, but the quality of service varies as well. All states must provide inpatient hospital services, outpatient hospital services, lab and x-ray services, skilled nursing services, and physicians' services. The law does not require the provision of dental services, prescription drugs, home-health-care services, private-duty nurses, or long-term institutional care. However, states may provide the aforementioned services if they choose. Also, the law does not specify the amount of coverage to be provided to various groups. For example, some states use approximately 50 percent of their Medicaid funds for nursing-home care, while other states spend little for this purpose. Because of these many factors, there has been a growing recognition that the Medicaid program has not been successful in providing quality care to all the poor and medically indigent.

In addition, critics charge that only one-third of the nation's elderly poor receive any Medicaid assistance. It is estimated that approximately 29 percent of the elderly poor and elderly near-poor have neither Medicaid nor private insurance and rely solely on Medicare for help. As a result, out-of-pocket medical spending drives one-third of the elderly near-poor into poverty. When medical expenses are deducted from income, poverty rates among the elderly rise from 12 percent to 17 percent. By raising the Medicaid income eligibility to the federal poverty line, another 2.2 million elderly poor could be assisted. By making Medicaid available to the near-poor, an additional 3.6 million elderly people with incomes between 100 percent and 150 percent of the federal poverty line would be covered. Providing coverage for both groups would cost over $3 billion.

Although the Medicare Catastrophic Coverage Act of 1988 was repealed, two important benefits pertaining to Medicaid were preserved. Medicaid programs must now permit the spouse of someone who enters a nursing home for long-term care to keep income of $815 per month ($1,000 in 1993) and $12,000 in liquid assets. Home ownership is excluded. Previously, Medicaid programs were not required to protect the assets of the spouse, and most elderly had to reach the poverty level in order to qualify for Medicaid. The 1988 act also requires state Medicaid programs to pay Medicare premiums, co-payments, and deductibles for beneficiaries below 100 percent of the poverty line. In 1987 Medicaid paid medical bills for an estimated 23 million persons eligible under public-assistance standards. On a cost basis, total expenditures in 1987 were approximately $45 billion.

Private Health Insurance

The size of the private health-insurance industry has been growing, reflecting the increased demand for protection from health-care costs. In 1987, 76 percent of the population had some private health insurance for hospital care and surgical expenses. Approximately 50 percent of private spending for health care that was not covered by public programs was reimbursed by private insurance. Typically, coverage is some sort of group-health insurance associated with employment.

Extension of coverage beyond surgical procedures in recent years has led to a higher share of physicians' services being reimbursed by private insurance. In 1986, private insurance reimbursements covered 42 percent of total expenditures for physicians' services, while for hospital-care expenses the corresponding figure was 36 percent. Insurance coverage has been more limited for other health-care services.

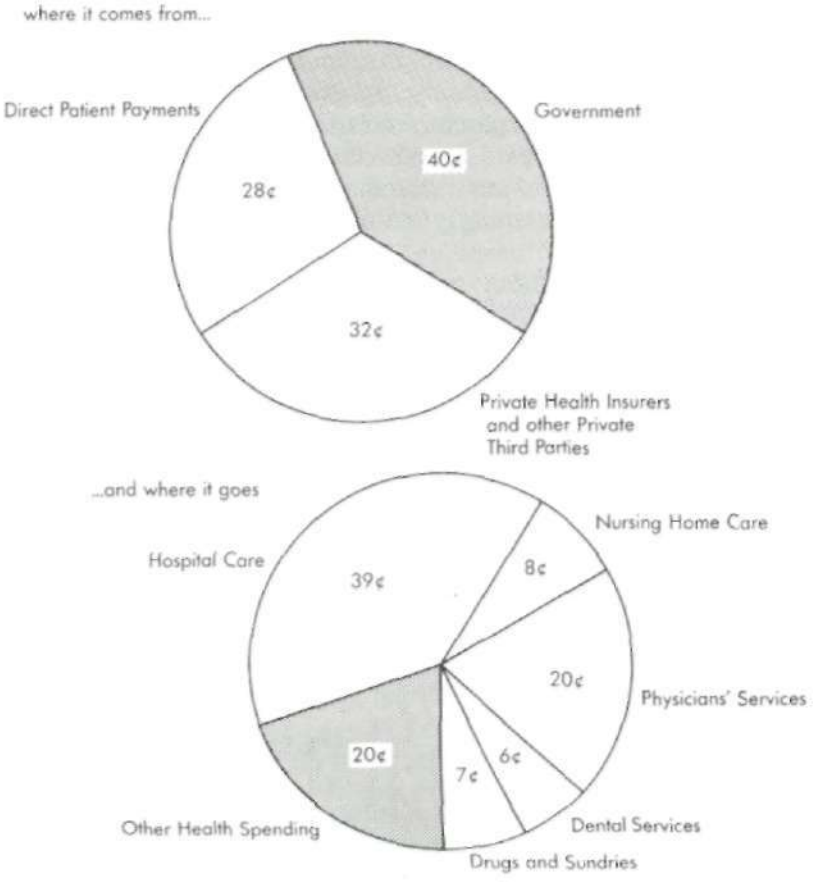
Another rapidly growing form of health insurance is major medical care, which currently covers about one-half of the population. Such coverage is typically tied in with other insurance in that it pays when basic medical insurance stops paying or for certain illnesses not covered by basic plans. After a stipulated deductible is met, major medical pays 80 percent of the charges up to a designated maximum, the exact amount depending upon the type of plan.

The most common criticism of private health insurance is that is does not cover a high enough portion of the total bill. A similar charge can be made against Medicare. However, when one considers the high costs involved, it is economically inefficient for any plan to cover 100 percent of personal health expenses.

Figure 9-2 shows the sources and uses of a single dollar of health-care spending on a national basis. Private health insurers and other private third parties contributed 32 cents of each dollar spent on health care in 1986.

FIGURE 9-2

The Nation's Health Dollar in 1986



SOURCE: *Statistical Abstract of the United States* (1989).

CURRENT PROBLEMS IN THE HEALTH-CARE INDUSTRY

Despite increased public and private insurance participation in the health-care field, major problems continue to challenge the industry. Two such problems relate to the supply of physicians and the increasing costs of medical services.

Supply of Doctors

One of the major controversies concerning the health industry is whether there is an adequate number of physicians to provide for the medical needs of the population. Patients who have waited in doctors' offices for long hours beyond the time of their appointments are likely to support those who decry the acute shortage of medical personnel. However, many health-care experts claim that there are enough medical doctors; what is needed is a more rational medical-care system. They point out that the supply of doctors is increasing with the demand for more health services. Each year the number of doctors graduating from our medical schools is growing at a faster rate than the population as a whole, despite monopolistic factors on the supply side, such as laws governing licensed practice and certain restrictive practices of professional associations of doctors.

The underlying basis for such opposing views on the need for additional doctors can be traced to problems associated with defining the term *need*. According to economic analysis, need is an expression of consumer demand because it is a measure of the amount of medical-care consumers will purchase at various prices. For the most part, however, need is defined in the health industry in a social sense and is related to the standards of the health profession. This social approach fosters controversy because of the lack of easy quantification.

Although disagreement exists over the need for additional doctors, there is a general consensus that serious problems exist in the delivery of medical services. The inequitable distribution of physicians geographically has long been recognized. Although the ratio of physicians to population is not a perfect measure of the adequacy of medical service, it is a widely used criterion for designating areas that are underserved. As with most professions, physicians tend to gravitate toward urban areas within more heavily populated states and away from areas and states that are primarily rural. For example, the District of Columbia (579 physicians per 100,000 populations), Maryland (317 physicians per 100,000 population), and Massachusetts (316 physicians per 100,000 population) had the highest physician-to-population ratios in 1986. Idaho (119 per 100,000) and Mississippi (122 per 100,000) had the lowest ratios of physicians to population.[2]

The higher incomes and the amenities derived from urban residence are major factors accounting for the lack of geographical balance in the supply of physicians. But there are other important considerations as well. Urban areas offer the benefits of professional interaction among physicians, which affords them a greater opportunity to keep abreast of the constantly changing state of medical science. In addition, urban medical centers provide better research

2. *Statistical Abstract of the United States* (1984) p. 110.

facilities and equipment. Finally, having spent more than a few years studying medicine, many graduating doctors no longer feel the strong ties to their rural home towns.

The uneven distribution of medical specialties has also hampered the provision of effective health care. Of particular concern is the growing disparity in the number of primary-care physicians compared to general surgeons. The sharp decrease in the number of general practitioners as a percentage of the total number of physicians reflects the relative decline in primary-care physicians. In 1970, 17 percent of physicians providing health care were general practitioners. By 1986 this figure had declined to approximately 9 percent. This trend toward medical specialization is the result of several factors. Perhaps the foremost reason is that, on the average, specialists earn higher incomes than do primary-care physicians. In addition, hospital staffs encourage specialization. An intern seeking a staff position in a good hospital quickly realizes that the chances for acceptance are enhanced if one is a specialist.

Consequently, medical-care delivery has become not only more city oriented, but more specialized as well. These shifts have altered the structure of both the supply of and the demand for the services of physicians and have resulted in increased medical costs.

Rising Costs

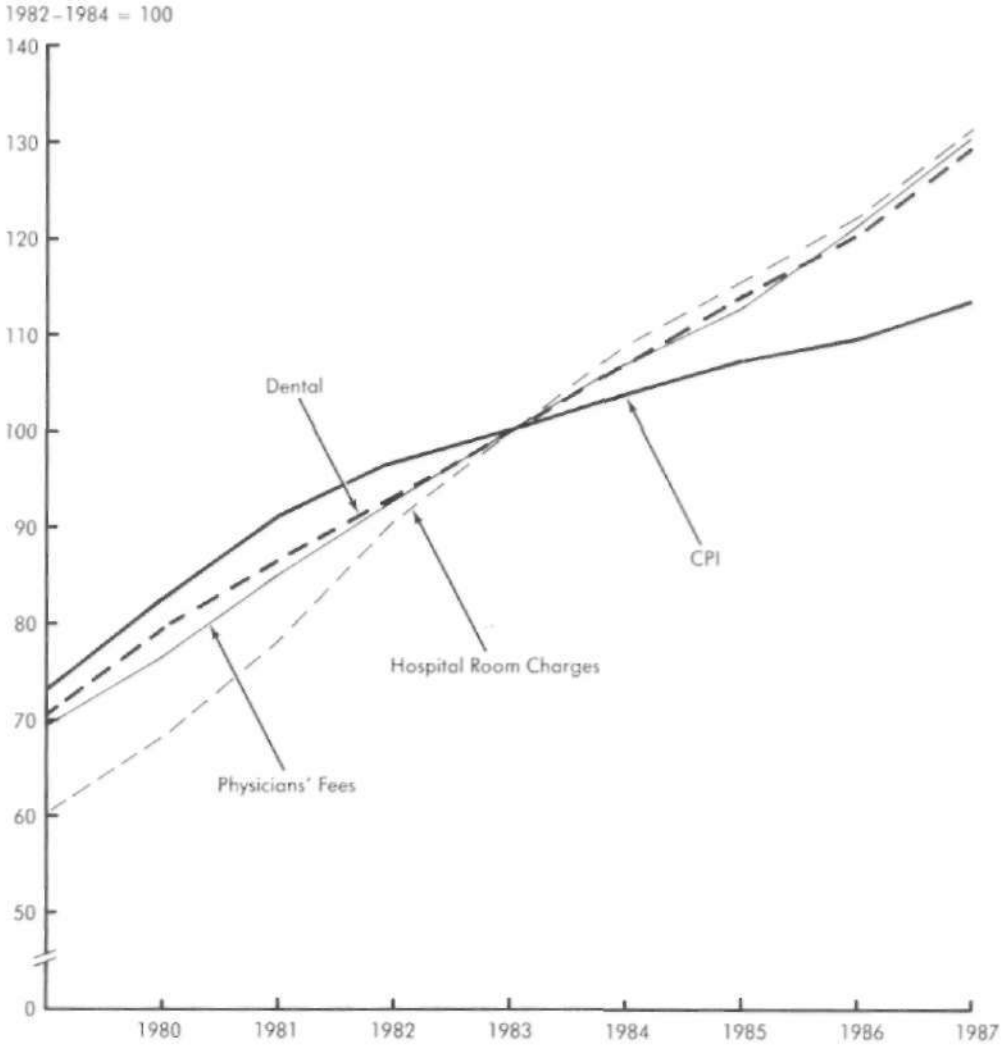
In 1986 the average citizen was paying almost five times the dollar amount that was paid in 1970 for medical services. Although many factors accounted for such a sharp increase in medical expenditures, three stand out as most worthy of our attention: (1) price increases as measured by the Consumer Price Index, (20 changes in the health-care system, and (3) changes in the size and age distribution of the population. It should be noted that the latter two factors do not represent price increases per se, but rather increasing expenditures for health care.

Price Increases. Figure 9-3 compares price increases for various categories of medical service to changes in the cost of living. Using 1982–1984 as the base period, the cost of living as measured by the CPI increased by 47 percent between 1980 and 1987. Hospital charges, however, increased at much faster rates than the overall price index, having risen by 82 percent since 1980. Likewise, increases in physicians' fees and dental charges have also increased in the overall consumer price index.

Changes in the Health-Care System. The effects of changes in the composition of medical services and goods, as well as changes in utilization rates, are referred to as changes in the health-care system. This category contains a variety of interlocking factors whose effects on health costs are difficult to measure independently of one another. These factors include changes in

FIGURE 9-3

Medical Cost Increases (1982–1984 = 100)



SOURCE: *Statistical Abstract of the United States* (1989).

technology and treatment that alter the mix and frequency of services used. Also included are changes in access to medical care, either by removing

financial barriers or by increasing the supply of services, which affect utilization rates.

Undoubtedly the quality of health-care service in the United States has improved appreciably with increased use of previously known methods and techniques, coupled with the introduction of new ones. Chemotherapy treatments, kidney dialysis, and open-heart surgery are very expensive and add significantly to national health expenditures. However, these examples represent major progress in medical care. In addition, the quantity of health-care services used has increased with growing demand, increasing total spending for health care. One relatively recent phenomenon serving to increase the per capita use and cost of health services has been the sharp increase in malpractice suits. The fear of malpractice suits has led many physicians to perform as many diagnostic tests as are available to prevent legal charges of medical incompetence. These extra tests are costly and may necessitate longer stays in the hospital, factors that add still more to the total cost of health care.

Size and Age of Population. The third factor contributing to increased health expenditures is the changing size and age distribution of the population. As the nation's population becomes older, it is logical to expect greater expenditures on health care. Per capita expenditures for physicians' services, for example, are nearly three times greater for people age 65 and over than for those under age 65. Both the number of physician visits per capita and the complexity of services per visit are relatively greater for the aged. Counterbalancing an older population is the fact that increases in the total population have declined during the past ten years, which has reduced demand pressures on certain segments of the health industry, particularly those segments servicing infants and youths.

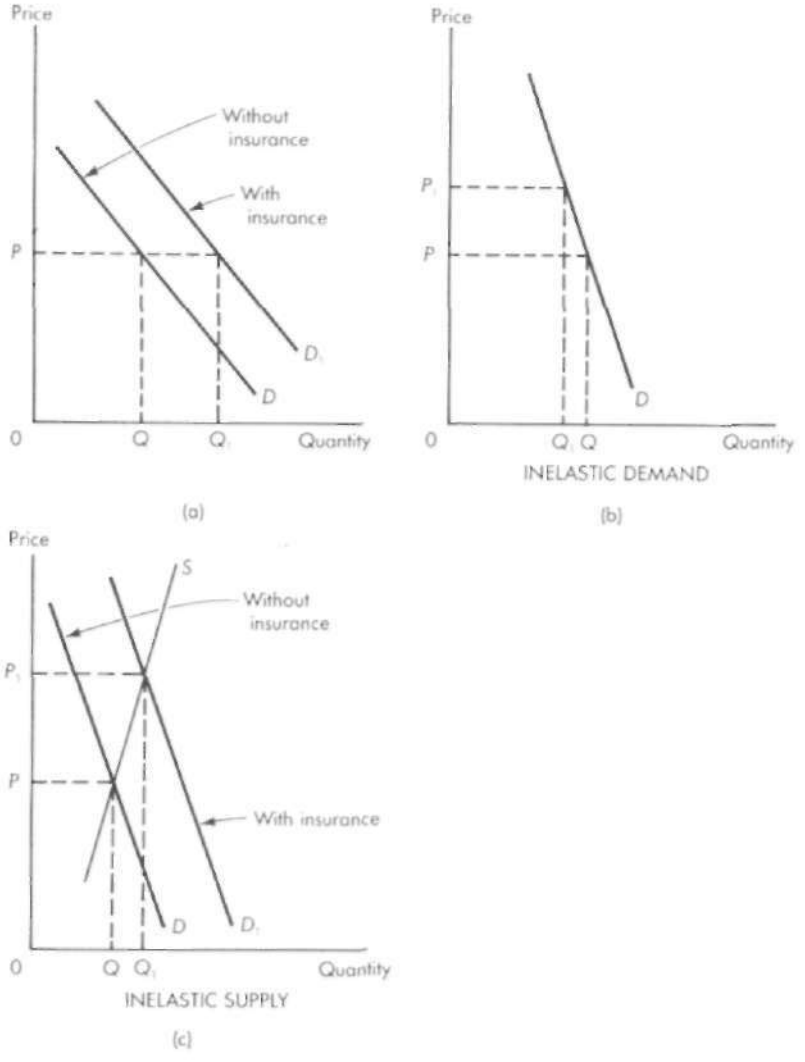
Supply-and-Demand Analysis. Supply-and-demand analysis serves as a useful framework for analyzing price inflation in the health-care industry. Critics of the industry have long argued that consumers demand more medical care than they would otherwise because most do not bear the full cost of treatment. In most cases third-party payments, either private insurance or public taxes, cover expenses. Insurance can be treated as a shift in the demand curve for health care to the right as seen in Figure 9-4a. A fiscal policy that excludes employer-provided health insurance as taxable income also strengthens the increase in demand.

Health insurance also reduces the price elasticity of demand for medical services by making consumers less sensitive to price increases. Since insurance covers most if not all of the medical bill, consumers are not prone to decrease the quantity demanded of health-care services commensurate with the increase in price. Figure 9-4b indicates the result in quantity demanded from a price increase when the demand curve becomes highly inelastic.

It must be recognized that an increase in demand would not automatically increase the cost of medical service. The impact that an increase in demand

FIGURE 9-4

Demand and Supply in the Health-Care Industry



and inelastic demand curve would have on price also depends on the elasticity of supply. If supply were price elastic, then an increase in demand might result in only a small increase in price and a much larger increase in quantity.

However, the supply curve for the health-care industry tends to be highly inelastic, and an increase in demand quickly pushes the industry to capacity, thereby forcing higher prices, as seen in Figure 9-4c.

The supply of medical-care output does not respond to higher prices largely because there exist substantial barriers to entry. Monopolistic restrictions on the part of professional associations have limited increases in supply. The power of the American Medical Association to control the licensing of physicians, to certify medical schools, and to regulate hospital internship and residency requirements has restricted the quantity of health-care services supplied. Consequently, higher prices for medical care results more in higher income for suppliers than they do in lower demand or increased output. Considering rising household incomes, the wide availability of private health insurance, and huge outlays on public health service programs such as Medicare and Medicaid, the steady increase in health-care prices is not surprising.

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

The spread of the disease known as acquired immune deficiency syndrome (AIDS) has also contributed to the rise of the nation's health-care bill. First identified in 1981, AIDS has become an epidemic. A total of 73,400 cases had been reported as of September 1988, with California and New York accounting for approximately 22 percent of the total. The number of people infected with the virus that causes AIDS is unknown, but experts estimate that number to lie somewhere between 1 million and 1.5 million.

With the spread of the disease, direct health-care costs continue to rise. Various studies of the costs associated with inpatient hospital care indicate that the average total costs for inpatient care, from the time of diagnosis until death, ranges from $50,000 to $150,000. The Public Health Service has estimated that the direct cost of care for the 175,000 AIDS patients projected to be alive in 1991 will be anywhere from $8 billion to $16 billion in that year alone.

In addition to direct costs, there are large indirect costs associated with the disease. Indirect costs include the loss of wages for sick persons, the loss of future earnings for persons who are permanently incapacitated or die because of illness, and the cost of infection control in the course of other health services.

The financing of health care for AIDS patients now depends on the same health plans that cover patients with other diseases. Most of the public funds for care of AIDS patients come from the Medicaid program, while private plans cover a substantial portion of AIDS patient care. The federal government expended over $790 million in 1988, with most of this sum going to research and public information. State government expenditures amounted to $156 million in 1988, with California accounting for 37 percent of the dollars spent.

As the number of cases increases, the disease will create greater strains on our health-care system. Society must determine how these increased costs will be shared by the federal government, state governments, private insurance carriers, and individuals.

NEWER APPROACHES TO HEALTH CARE

Most Americans still receive medical treatment in the traditional way: they see a private practitioner on an acute, episodic basis and submit to hospital care if necessary. Charges for such medical attention usually are paid wholly or partly by third-party insurers. In recent years, however, numerous variations to the traditional system have proved to be successful.

Health Maintenance Organizations

One of the most widely used alternatives to traditional medical care is the Health Maintenance Organization (HMO), consisting of groups of people who band together to receive a wide range of health services. Members prepay for medical service. The goal of the HMO is to provide satisfactory medical service under one plan at the lowest possible cost.

As members of an HMO, individuals and families have access to an entire team of physicians. In addition to primary-care physicians, such as general practitioners and pediatricians, an HMO typically includes specialists on its staff such as radiologists, surgeons, obstetricians, gynecologists, and neurologists. In large part, the number of specialists included on a given HMO physician team is a function of the size of the HMO. The HMO's team of doctors, nurses, laboratory technicians, and administrators usually works together in a single building and provides 24-hour medical care, 365 days a year. Many HMOs also have their own pharmacies. If hospitalization is necessary, the patient is admitted and treated at an affiliated hospital at no additional out-of-pocket expense to the individual. The annual cost of membership depends on the area of the country and the extent of service provided. Although not inexpensive, HMO membership does provide financial protection against the burdens of catastrophic illness, thereby precluding most, if not all, of the economic uncertainty resulting from unexpected large medical expenses. This protection is usually not included in standard insurance programs and is only acquired at additional expense.

The Health Maintenance Organization is based on the concept of the efficiency of preventive medicine. By stressing preventive and outpatient care, HMOs hope to reduce the economic waste associated with the overuse of inpatient hospital services. Because members have prepaid for medical service, they are more likely to seek medical care in the early stages of illness. This

keeps HMO members healthier at reduced costs. Also, HMO doctors are paid on a salary basis, removing the incentive to perform unnecessary services.

As a result of a 1973 federal law, most employers of 25 workers or more with health-insurance plans must offer an HMO plan as a voluntary option. In 1970 there were only 25 HMOs operating in the United States. By 1987 the number of HMOs had increased to 662 with more than 29 million persons enrolled.

Despite rapid growth in membership, the HMO system of health-care delivery has experienced increased criticism in recent years. Prior to 1985 the most-often-mentioned concerns included the limited choice of physicians and hospitals, the impersonality of the system (particularly the doctor-patient relationship), and the possible lack of coverage outside the service area. Now, however, concern centers on costs and effectiveness. Some HMOs, with their broader scope of benefits, now carry higher premiums than traditional insurance plans. In part, this situation has been brought about by the success of HMOs, for they have forced regular insurance plans to become more competitive. In addition, many employers are now requiring certification of hospital stays and employee co-payment of premiums, while higher deductibles have made some employees in traditional plans more cost conscious. HMOs also face heavy competition from one another, as large corporations and small operators continue to enter the industry.

Health-care analysts view the future of HMOs with guarded optimism. Where costs are rising and regular insurance plans are heavily used, HMOs have more room to cut costs and underprice standard plans. Resistance occurs in markets where competition has already reduced medical costs. As long as HMOs can show they can be more cost-effective than traditional private insurance programs, membership growth should continue.

Medical Centers

Because of lower costs and greater convenience, privately owned and operated emergency medical centers are entering the health-care scene throughout the United States. Often operated as chains of centers, they usually remain open from early morning to late evening seven days a week, providing walk-in services for most routine health-care and medical emergencies.

Most centers are equipped to stabilize serious and dangerous conditions resulting from accidents or illness. However, they deal mostly with problems that make up the majority of cases handled in hospital emergency rooms, such as broken bones, earaches, and the like. If hospitalization is required, centers will transport patients to nearby hospitals.

From but a handful several years ago, there are now more than 1,000 centers in operation. Most are independent, but some are associated with hospitals. Naturally, emergency medical centers are not without their critics, some of whom refer to them as "doc in a box." A major criticism of the centers

is that a patient who underestimates the seriousness of his or her condition may waste valuable time by not going directly to a hospital. The impersonality of the operation has also received criticism, but the key complaint appears to stem from the fact that centers are taking nonurgent cases away from hospital emergency rooms, which are sources of much needed revenue for hospitals. Medical center visits can cost up to 50 percent less than equivalent treatment in hospitals. As a result they are beginning to attract industry support. Businesses are now sending more employees to centers for routine examinations and minor complaints, taking away insurance-paid cases from hospitals.

As a form of emergency-room competition, centers will probably continue their rapid growth. The lifestyle of American families has changed. Convenience in health care appears to be as much in demand as convenience in stores; health care at a cheaper price is certainly attractive.

Home Health Care

The marked growth in the home health-care industry in recent years can be traced to a combination of factors working together: the need to constrain health-care costs, an aging population, advanced technology, and an increased desire by patients for treatment outside of hospitals. Billions of dollars are being spent each year on home health care for such sophisticated services as intravenous feeding, cancer chemotherapy, and kidney dialysis.

In large part, the increase in demand for home health care is a function of costs. The average home-care visit costs about $75 compared with an average cost of $501 for a day's hospital stay. Health insurers have noticed the cost differential and encourage home care, whenever feasible, as a viable alternative to hospital confinement.

Home health care reflects the national trend toward out-of-hospital treatment, as witnessed by the increasing number of home births, birthing centers, and hospice centers. The majority of home health-care patients are over the age of 65.

The 1980 Omnibus Reconciliation Act assisted the home-health-care industry by expanding Medicare reimbursement for home treatment. Medicare now covers part-time skilled nursing care, health aids, occupational therapy, medical social services, and supplies and equipment.

Quality of home health care continues to be of prime concern. To ensure quality, personnel and patients alike must receive thorough training. Reimbursement can be another problem, for Medicare does not include all home therapies, and coverage by private insurance varies widely. The general opinion, however, is that home care is equal to or better than hospital care for the nonacute stages of many diseases.

Hospice Centers

Terminally ill patients also have increased the demand for out-of-hospital care through use of hospice centers, which serve people who are expected to live

usually six months or less. The major aim of hospice centers is to provide greater personal comfort and dignity to those who need medical attention, but for whom a cure does not exist. Hospice care has also been shown to be more cost-effective than traditional hospital confinement.

Beginning in late 1983, Medicare hospital insurance began providing financial assistance to individuals who elect to receive hospice care instead of other Medicare benefits, except services of the attending doctor. Covered services include hospice care therapies, medical social service, nursing care, short-term inpatient care, and outpatient drugs for pain relief.

GOVERNMENT'S INCENTIVE APPROACH TO CUTTING HEALTH-CARE COSTS

With the demise of the numerous multifaceted and extraordinarily expensive national health-insurance bills of the 1970s, the federal government has taken a different approach to public health programs. Now the emphasis is on cost control.

Encouraged by cost reductions resulting from increased competition in health care, a large number of legislators support proposals that seek to change the incentives in an insurance system that has hidden the real cost of health care from physicians and patients alike. In the long run, they hope to alter consumer attitudes about how much health care they need.

In 1983 Congress enacted a law that many believe is just the beginning of a system that will include strong competitive forces and new incentives for holding down health-care costs.

Reducing Expenditures

In 1983 Congress passed the "prospective payments" system for hospitals. Since Medicare's inception, hospitals had been paid for all costs incurred in treating the elderly, an approach that gave hospitals the incentive to retain patients longer and run more tests than sound medical practice might otherwise dictate. The 1983 law fixes Medicare payments for specific hospital treatments in advance. Hospitals that can perform a procedure for less than the stipulated rate are allowed to keep the difference; hospitals with costs above the fixed rate must absorb the loss. A major advantage of the new rate-setting system is that the government can better estimate what its costs will be in any given year. A weakness in the prospective payment plan is that only hospital costs are predetermined. Physicians' fees and other medical costs under Part B continue to be reimbursed as incurred.

CONCLUSION

Over the past two decades, Americans have come to expect the best medical care money can buy. By 1983 it became apparent that unless changes were made, Medicare was headed for bankruptcy. The prospective payment system reflects the collective concern over the political fallout that would occur if Medicare became insolvent. With the enactment of this system, health-care analysts now believe that Medicare will be financially solvent at least to the year 2000.

As a result of recent federal approaches to containing medical costs, the delivery of health care in the United States has undergone a significant change. Hospitals have cut costs, slashed prices, turned to creative marketing, and adopted cost-effective technology in diagnosis and treatment. Although Americans are still spending more than a billion dollars a day on health care, they are visiting doctors and hospitals less often. Hospital stays have also become noticeably shorter.

The transformation in health-care delivery has produced heated controversy. Evidence exists that hospitals are releasing patients before they are ready to be discharged, readmitting patients with the same diagnosis, improperly classifying patients, and unbundling services to shift the source of payment from Medicare's regulated Part A to its unregulated Part B. Another controversial issue concerns the charge that some people are being denied treatment at private hospitals because they can't afford to pay and are being sent to overburdened public hospitals. Critics contend that without changes, the present system will make patients with low incomes or complex medical problems undesirable to treat. The new system will continue to be a barrier for these patients and will drive public and inner-city hospitals further into deficits.

In the private sector, difficult choices will continue to confront businesses and their employees. Private businesses spend billions of dollars annually on health-insurance premiums and have experienced sharp increases in premium costs. Company-paid insurance programs are now a major bargaining item in many industries as employers seek to prevent overuse of health-care services. Cost sharing by employees is now seen as the most efficient approach to overuse. Businesses are presenting a wide variety of options that involve choice and flexibility in selecting medical care.

The health-care industry is the third largest in the economy. In both the public and private sectors, the undeniable trend is toward greater competition and free-market incentives to guide decision-making.

QUESTIONS FOR DISCUSSION

1. What role should the federal government assume in guaranteeing adequate health care?
2. How might competition be increased in the health-care field?
3. Are hospitals already too competitive in that the same expensive technology is duplicated by hospitals in the same marketplace?
4. To what extent should employees contribute to employment-related health-insurance premiums?
5. Given longer life expectancy, improved medical technology, and rapidly increasing health-care costs, how does economic analysis enter into a decision to prolong the life of a seriously ill aged patient?
6. In your opinion, is there truly a "doctor shortage"?
7. With the implementation of Medicare's prospective payment system and the increased popularity of HMOs, do you believe the quality of medical care has been affected? If yes, how?
8. What steps do you think could be taken to reduce the costs of Medicare and Medicaid?

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10

CLEAN AIR
ARE WE WILLING TO PAY THE PRICE?

During the 1960s and 1970s, improving air quality became one of our country's major socioeconomic priorities. But during the Reagan Administration, air quality, along with many other environmental issues received little attention. Consequently, few initiatives were taken to strengthen improvements made in previous decades. In January 1989, however, in his first speech before a joint session of Congress, President Bush signaled a change in policy when he urged legislators to step-up efforts to provide a cleaner environment for present and future generations. Specifically, the President called for a new Clean Air Act.

Environmental legislation of the 1990s is likely to be broader in scope than that enacted previously. Future legislation will have to include national and international concerns, as well as those focused on local and regional levels. Concerns over acid rain and the greenhouse effect, for example, are global problems that will require international cooperation. As these increasingly complex issues are confronted, economists will be challenged once again to provide acceptable, cost-effective approaches to solving environmental problems.

AN ECONOMIC PROBLEM

Air is a resource provided by nature without charge and is available in abundance to anyone wanting to use it. Because air is abundant, pricing it is rather difficult. For this reason, economists classify air as a "free good," and by definition free goods are outside the realm of economic analysis. Public acceptance of this classification actually stimulates pollution. That is, because society regards air as a free good, the detrimental social consequences caused by its misuse are not directly allocated to the costs of producing goods and services.

Clean air, then, is underpriced and is becoming increasingly scarce in most urban areas. Contamination of the atmosphere forces a change in the concept of air as a free good. Instead, clean air must be classified as an economic good. The scarcity of clean air is evident by the fact that under certain conditions a price must be paid to acquire it.

The mere presence of air pollution represents a marked departure from the workings of a perfect market economy. If perfect competition were operative, all economic resources would be directly allocated and the welfare of society would be maximized. Prices would reflect the true costs of production and provide automatic, socially valid guidelines for investment and production.

The existence of air pollution, however, shows a misallocation of resources. Pollution implies that some portion of the total production costs are being externalized, that is, are being borne by economic units other than the producers. Externalities arise because the private marginal cost function that dictates the behavior of a profit-seeking firm is less than the marginal cost to society. Unless all costs of production are internalized, a firm's cost structure will not accurately determine the firm's product price and its optimum output level. The firm will underprice its product, overproduce, and reap greater profits as a result. Other firms in the area, however, are forced to account for costs stemming from pollution because of damaged crops, diminished worker productivity resulting from respiratory illness, and deteriorating materials, structures, and machines. Consumers of products produced by the pollution-causing firm also absorb these costs, for in purchasing the firm's products they forego the opportunity of acquiring other products that could have been produced with these additional resources. The pricing mechanism is not reflecting the alternative uses to which these resources might be put. In short, there is a misallocation of resources.

However, if all costs of production, including the external cost of pollution, are fully internalized, the firm's product will sell at a higher price and fewer units will be sold. Now the additional resources can be channeled into producing alternative products. The value of these alternative products, which could not have been produced if the cost of pollution had not been internalized, represents the external cost of pollution to the consumer.

In addition to actual cost outlays by firms and foreclosure of consumer opportunities, air pollution harms our health, affronts our senses, and lessens our enjoyment of life. In analyzing the imperfections of the real world, however, the economist does not advocate the universal elimination of externalities, because if this is done net benefits may be negative. Also, in many cases the costs of preventing air pollution may exceed the costs of cleaning the air once it is polluted. Rather, the economist is mainly concerned with a method whereby all costs and benefits of an economic activity are included in the firm's economic decision-making process. Thus, the economist is indeed very much concerned with the problem of air pollution.

POLLUTION-CAUSING FACTORS

Air is a gaseous combination of oxygen, nitrogen, and argon. Also included to a much lesser extent are helium, hydrogen, krypton, neon, xenon, and carbon dioxide. These gases constitute the earth's atmosphere, the habitable portion of which is but a relatively thin layer tightly encompassing the globe. The earth's total air supply seems vast; it is estimated by scientists to be in the neighborhood of six quadrillion tons. But still people have, in their own inimitable way, managed to crowd, dirty, and deplete this resource to the extent that the air they breathe is injurious to human, plant, and animal life. The crux of the problem is that the total volume of air is of much less concern than is the availability on the earth's surface of sufficient quantities of clean air in a given place and at a given time.

Air is never really pure. Even ignoring pollution caused by human activities, some contamination of the air from natural processes occurs all the time. Volcanic eruptions, forest fires, dust storms, and vegetative decay all discharge a variety of noxious gases that pollute the air. But pollution resulting from natural phenomena is rarely significant to the overall health of the atmosphere. However, air pollution stemming from human activities—farming, manufacturing, or simply moving about—is a major concern. In emitting a vast number of gases, fumes, and particles into the sky from these activities, humanity has caused a significant pollution overload. When combined with certain environmental factors, this overload might produce major ecological consequences.

Industrialization

Air pollution is directly related to a nation's level of output and use of economic goods and services. Thus, it is a by-product of affluence. Being the most affluent nation in the world, the United States is therefore confronted with an air-pollution problem of great magnitude. Extended economic growth requires greater participation in activities that traditionally have caused the most

pollution. More electric energy results in greater coal consumption; more automobiles result in greater use of gasoline; more garbage results in a greater number of public dumps; and more materials-processing results in greater emissions of industrial waste.

Technological advances that increase the variety and number of goods at our disposal also load the air with thousands of new pollutants. In areas characterized by a concentration of such industrial activity, there is likely to be an acute air-pollution problem.

Urbanization

Air pollution also tends to be directly related to population density. More than ever before, Americans are crowding themselves together in smaller and smaller areas. At present, over 76 percent of the population is concentrated on just over 16 percent of the land. Urban areas, which have tripled their populations since 1940, now account for over 73 percent of the nation's population.

Urbanization of the population has resulted in increased atmospheric pollution levels in our cities. As more and more people congregate in urban areas, they cause larger amounts of pollution and, in turn, are exposed to larger amounts without a corresponding increase in the amount of air available. As a result, no major American city is without an air-pollution problem. The essence of the problem is that it is becoming increasingly difficult for Americans to continue to crowd together and, at the same time, increase our quality of life.

Weather

Air movement is essential to pollutant dispersion. As a rule, the earth's atmosphere is capable of cleansing itself of the various pollutants discharged from heavily populated, industrialized areas as long as either horizontal or vertical air currents are present. Should both of these air currents be absent, however, an air-pollution disaster may be in the making.

Without wind (horizontal air movement), the sole means of dispersing pollutants in the atmosphere is by vertical currents. Ordinarily atmospheric temperature is inversely related to height. The temperature of air falls by 5.4 degrees Fahrenheit for every 1,000 feet above the earth's surface. This temperature gradient allows the atmosphere to rid itself of pollutants because the warm polluted air, being lighter, can rise into the cooler air and disperse. However, if the temperature decrease is less than 5.4 degrees Fahrenheit per 1,000 feet, the warm air, unable to rise because of the existence of even warmer air above it, hugs the earth, trapping pollutants near the surface. This condition is known as a *thermal inversion.*

There are two basic ways in which a thermal inversion can occur. One type of inversion occurs at night, when the earth's surface loses the heat

radiated by the sun during the day. As the earth cools, so does the air in the lower stratum. The upper air, however, remains warm and acts as a ceiling over cooler air rising from below. The lower stratum of air, then, remains polluted. The inversion normally persists until the following morning, when the sun warms the earth's surface, making the lower air once again warmer than the air above it. Unfortunately, this nighttime "radiation inversion" traps pollutants emitted during the peak daytime hours of pollution-causing activities. It begins with the late afternoon rush hour and continues into the morning rush hour.

The second type of thermal inversion is of a greater magnitude and longer duration. It stems from windless high-pressure systems, which can blanket an entire section of the country. When cooler air approaches, it moves beneath a layer of warmer air, creating an inversion that can last for weeks, until a weather front arrives to break it up. In the eastern part of the United States, inversions of this nature often occur in late summer or early autumn, creating hazy "Indian summer" weather. United States Weather Bureau studies indicate that these inversions are occurring about 25 percent of the time throughout the United States. Inversions play a major role in air pollution. They have been a factor in every air-pollution disaster involving death and serious illness.

POLLUTANTS AND SOURCES

Transportation, fuel combustion from stationary sources, industrial processes and solid-waste disposal are the major sources of air pollution. Table 10-1 compares air-pollutant emissions by pollutant and source for the years 1970 and 1986. It is obvious from the data presented in the table that a great deal has been accomplished in reducing the amount of harmful pollutants since enactment of the Clean Air Act in 1970. How much more can be achieved will depend upon the economic benefits and costs associated with alternative solutions.

Historically, public concern over pollution centered primarily on discharges of smoke and visible particles. Since the 1960s, however, society has directed greater attention to gaseous emissions. Thanks to the automobile's internal-combustion engine, transportation is clearly the largest single source of carbon monoxide and lead emissions. Stationary-fuel combustion constitutes the second largest source. Electrical-generating stations that use coal and oil as fuel account for most of the sulfur-oxide emissions produced by stationary sources. Industries of various sorts and sizes contribute a major share of both gaseous and particulate matters found in the atmosphere. Iron and steel mills, petroleum refineries, chemical plants, smelters, sawmills and rubber manufacturers have traditionally been among the worst offenders. Solid waste is the fourth major source of air pollution, since it too emits dangerous fumes and gases into the air.

TABLE 10-1

Air Pollutant Emissions, by Pollutant and Source: 1970 and 1986
(In millions of metric tons, except lead in thousands of metric tons)

		Controllable Emissions						
		Transportation		Stationary Fuel Combustion				
	Total Emissions	Total	Vehicles	Total	Electric Utilities	Industrial Processes	Solid Waste Disposal	Misc. Uncontrollable
1970								
Carbon monoxide	98.3	71.8	62.7	3.9	0.2	9.0	6.4	7.2
Sulfur oxides	28.2	0.6	0.3	21.3	15.8	6.2	Z	0.1
Volatile organic compounds	27.0	12.3	11.1	0.9	Z	8.7	1.8	3.3
Particles	18.0	1.2	0.9	4.5	2.3	10.1	1.1	1.1
Nitrogen oxides	18.1	7.6	6.0	9.1	4.5	0.7	0.4	0.3
Lead	203.8	163.6	156.0	9.6	0.3	23.9	6.7	Z
1986								
Carbon monoxide	60.9	42.6	35.4	7.2	0.3	4.5	1.7	5.0
Sulfur oxides	21.2	0.9	0.5	17.2	14.3	3.1	Z	Z
Volatile organic compounds	19.5	6.5	5.3	2.3	Z	7.9	0.6	2.2
Particles	6.8	1.4	1.1	1.8	0.4	2.5	0.3	0.8
Nitrogen oxides	19.3	8.5	6.6	10.0	6.6	0.6	0.1	0.1
Lead	8.6	3.5	3.3	0.5	0.1	1.9	2.7	Z

Z = Less than 50,000 metric tons.

SOURCE: U.S. Environmental Protection Agency, *National Air Pollutant Emission Estimates* (1940-1986).

The figures in Table 10-1 are based on the weight of emitted pollutants, and conclusions drawn on this basis can be misleading. In evaluating environmental quality, emphasis should be directed to the effects of various emissions and not merely the amounts emitted. A ton of sulfur oxides, for example, is likely to have a greater adverse environmental effect than a ton of carbon monoxide. Also, the presence of some pollutants in the atmosphere influence the effects of others. The existence of particulate matter, for example, worsens the effects of sulfur oxide. In addition, some pollutants may react with others to form new substances, depending on factors such as temperature, relative humidity, sunlight, and pollution concentrations. Finally, national air-pollution figures can be misleading because they do not indicate regional differences in pollution levels. The uneven distribution of population and industrial activity is likely to result in pollution problems that differ in severity from one place to another.

EFFECTS OF AIR POLLUTION

For years, air pollution was generally thought to be a small price to pay for continued economic progress. Relatively few scientists questioned its impact on property damage and health. Major air-pollution episodes were considered isolated events caused in large part by unfavorable climatic conditions. With an increase in the frequency and severity of such episodes in metropolitan areas, however, it became evident that air pollution was more widespread and costly than ever imagined. The conditions of "smog," "fog," and "haze" were viewed with suspicion and found in many cases to be euphemisms for dangerously contaminated air.

Major Episodes

The first recorded air-pollution catastrophe in modern times occurred in the Meuse River Valley in Belgium between December 1 and December 5, 1930. Heavy industry characterized the economic structure of the valley, and substantial amounts of sulfur dioxide and particulate matter were being regularly discharged into the air. During the first week of December, a static air mass hung over the valley. This stationary air mass, accompanied by heavy fog, produced a thermal inversion. Trapped by the ceiling of warmer air, industrial wastes became concentrated in the motionless air. By the time the inversion lifted—four days later—63 persons had died and approximately 5,000 had become seriously ill.

A similar episode occurred in Donora, Pennsylvania, in October 1948. Donora is a small industrialized town situated on the banks of the Monongahela River, some 30 miles south of Pittsburgh. On October 26, a windless high-pressure system blanketed the entire eastern section of the country, and in Donora moisture from a recent rainfall added fog to the inversion. As a result, the daily radiation inversion, which normally cleared around noon, did not lift. Particulate matter and large amounts of sulfur dioxide, discharged by industrial plants, riverboats, and trains, saturated the atmosphere. This stationary low air mass remained for four days, during which time, 20 persons died and nearly 6,000 of the town's 16,000 residents became ill. Like the incident in the Meuse River Valley, this disaster was caused by the combination of pollutants and thermal inversion accompanied by fog.

On December 5, 1982, during a thermal inversion, a killer smog consisting of pea soup fog and coal smoke settled over London, England. Because the month was December, the situation was immeasurably aggravated by the widespread use of soft, smoky coal in household furnaces. As the black smoke belched from chimneys throughout London, the city's air became saturated with pollutants. During the four days in which the inversion lasted, the smog killed approximately 4,000 people and caused respiratory illnesses. But unlike

the Meuse Valley and Donora episodes, household coal burning, rather than industrial wastes, was the probable source of the pollution.

Some areas in the United States experience pollution overloads all too frequently. In November 1971, Birmingham, Alabama, a steel-producing center, experienced severe air pollution during a thermal inversion that lasted three days, but this incident was not the city's first air-pollution crisis that year. A similar episode had occurred only eight months before. The November incident, however, was more severe. On the second day of the inversion, the pollution count had climbed to 771 micrograms of particulate matter per cubic meter of air—three times the level at which adverse health effects occur. Particularly affected were the elderly, the young, and those people suffering from cardiovascular or respiratory ailments.

Emissions declined in the following days as industrial plants curtailed operations and a westerly wind broke up the inversion. During the inversion, 5,000 workers were laid off with a loss of $400,000 in wages. The costs to human health have not been ascertained, but they were undoubtedly large.

These major air-pollution episodes are unusual. But, as deadly as they are, persistent air pollution may be more harmful in the long run. Persistent air pollution is the daily low-grade contamination of the atmosphere. Its effects are insidious, and its costs are extremely high.

Costly Effects

It is difficult to accurately assess exactly what low, persistent levels of air pollution do to human beings. But air pollution has been linked to a number of respiratory ailments, including lung cancer, emphysema, asthma, and chronic bronchitis. Particulates, sulfur oxides, and nitrogen oxides have all been associated with acute respiratory disease. Other pollutants, such as asbestos fibers and lead particles, are known to be extremely hazardous, even in small amounts. The total number of dangerous pollutants and their effect on human health is unknown, but the introduction of new chemicals and new uses for existing chemicals make measurement more difficult.

Property is also subject to immense damage from air pollution over time. Air pollution is responsible for abrasion, corrosion, tarnishing, soiling, cracking, and general weakening of materials, structures, and machines. Sulfur compounds in the atmosphere are particularly damaging. Combining with atmospheric moisture to form sulfuric acid, they are known to attack and destroy even the most durable of materials. Sulfur dioxide attacks iron and steel; rots leather; destroys cotton, wool, and nylon fabrics; and harms upholstery. Sulfuric acid in the air causes sulfates to form on the surface of stone. These sulfates dissolve in water, wearing away buildings and statues. Limestone, marble, roofing slate, and mortar are especially vulnerable to attacks of sulfuric acid. Hydrogen sulfate, another sulfur compound, reacts with lead

compounds and blackens homes painted with lead-based paints. It also tarnishes copper and silver.

Ozone, a product of photochemical smog, cracks rubber rapidly, thereby creating high costs for car owners and the telephone and electrical industries. Particulate matter soils cars, homes, clothing, and buildings, necessitating steam-cleaning of buildings, additional cleaning in the home, and more frequent cleaning of cars. In addition, pollution from particulate matter has a negative effect on real estate values.

Every metropolitan area in the country now experiences some damage to vegetation from air pollution. Livestock and vegetation losses stemming from currently known pollutants probably amount to hundreds of millions of dollars each year. Trees, shrubs, flowers, vegetables, fruits, and grain are all being damaged by air pollution. Sulfur dioxide, ozone, and fluorides are known to be major destroyers of plant life.

Sulfur dioxide unites with water contained in leaf cells to form sulfates, which in turn kill off plant cells. Cotton, wheat, barley, and oat crops are especially susceptible to sulfur-dioxide poisoning. Ozone enters the pores on the underside of leaves, where it begins destroying cells. Grapes, tobacco, and spinach are examples of the dozens of crops injured in this way by ozone. Fluorides destroy plant life by accumulating on the tips of leaves, causing them to wither. With increased accumulations of fluoride, entire plants may die. Corn, peaches, and flowering plants of many varieties suffer severe damage from fluorides.

Air pollution also endangers public safety by reducing visibility. When combined with fog, pollutants from industry can create extremely dangerous driving conditions. A motorist entering a cloud bank of smoke and dust is inclined to swiftly apply the brakes for lack of visibility. As other automobiles enter the cloud bank, a chain collision results. Several major accidents of this sort have occurred along the New Jersey Turnpike as well as on other major thoroughfares throughout the country.

Air pollution can also be hazardous and costly to air transportation. Air pollution mixed with normal fog conditions can result in costly delays to both travelers and airlines. Worse yet, this combination may also be responsible for tragic airplane crashes.

COMBATING AIR POLLUTION

Increased knowledge of the dangers of air pollution, along with changing public opinion, caused Congress to enact federal legislation aimed at regulating air quality. Undoubtedly, the Donora episode served as a catalyst in making air quality a major national priority. In hindsight, however, the federal-state partnership to preserve the environment would have been more effective if greater attention had been given to research into the problem. Federal legisla-

tion was passed at a time when the technology needed to control pollution was unknown or unproven and the costs of cleanup were uncertain.

Federal Programs

The federal government launched its fight against air pollution in 1955 with the passage of the Air Pollution Act. In retrospect, the act was but a modest beginning toward cleansing the nation's air. It dealt primarily with research into the nature and extent of the nation's air-pollution problem, authorizing the Public Health Service (PHS) to prepare or recommend research activities, conduct studies, disseminate information, and provide limited funding to private and public agencies for surveys, research training, and demonstration projects.

Although not of great importance in itself, the Air Pollution Act of 1955 provided the basis for a series of landmark amendments to the act in subsequent years. The Clean Air Act of 1963 authorized the Public Health Service to take corrective action in areas in which air pollution was an interstate problem. The PHS could also grant money to local agencies to initiate or expand their own control programs. Local areas initiating or expanding control programs were eligible to receive a two-thirds subsidy from the federal government toward the cost of a program. In 1965, amendments to the Clean Air Act gave the federal program authority to curb motor vehicle emissions. Federal standards on emissions were first applied to 1968 motor vehicles.

Current federal-government activity in air pollution abatement and research stems from the Air Quality Act of 1967 and the Clean Air Act of 1970. The Air Quality Act represented a systematic effort to deal with air-pollution problems on a regional basis. It called for states to set air-pollution standards on a regional basis and for regional standards to be enforced, locally if possible. It also substantially strengthened the powers of local, state, and federal authorities in matters of pollution. The work accomplished under the 1967 legislation paved the way for enactment of the Clean Air Act of 1970.

The Clean Air Act of 1970 is undoubtedly the most controversial and comprehensive federal pollution-control program. The act was the first law to call for national, uniform air-quality standards based on geographic regions. Under the provisions of the act, the Environmental Protection Agency (EPA) has the authority to enforce two sets of standards, primary and secondary. Primary air-quality standards concern the minimum level of air quality that is necessary to keep people from becoming ill. These levels are based on the proven harmful effects of individual pollutants. Secondary standards are aimed at the promotion of public welfare and the prevention of damage to animals, plant life, and property in general. Within each geographic region, state governments may determine how national air-pollution objectives are to be reached.

Automobile emissions received particular attention in the 1970 act. New cars must meet EPA emission standards, which are applicable to vehicles and engines for their useful life, five years or 50,000 miles, whichever comes first. The effect of the 1970 act was to require a virtually emission-free automobile by 1976. Since leaded gasoline had been shown to impede the effectiveness of pollution-control devices and to be a danger to human health, the EPA required that nonleaded gasoline be made available for all 1975 automobiles.

The act required the EPA to set standards of performance for new and modified stationary sources of pollution. This provision has resulted in direct emission limitations on all major pollutants from specified types of sources. For all existing unmodified sources in specific categories the states are required to set state performance standards.

Congress amended the Clean Air Act once again in 1977. These amendments included an extension of the auto-emission-abatement schedule and imposed requirements for use of the best-available-control technologies for new manufacturing plants and electric utilities in order to limit the emission of harmful pollutants.

Faced with the possibility that no new 1978 model cars could be produced because of the inability to comply with pollution-control laws, Congress substantially relaxed the schedule for abatement of auto emissions. Also, the 1977 amendments increased the amount of nitrogen oxides that would be legally permissible in 1981 and thereafter. The law allowed nitrogen oxide emissions to remain at $2\frac{1}{2}$ times the levels permitted under the original standards of the 1970 act.

The 1977 amendments also provided that stationary sources of pollution be given an extension until 1979 to meet clean-air requirements, after which such sources would become liable for penalties calculated to remove the economic incentive for noncompliance. In any area where air-quality standards have not been fully attained, no new industrial plant could be built unless the state had adopted an acceptable air-pollution-control plan to assure compliance. Any new source of pollution was required to install the best-available-control technology as defined by the federal government.

After a decade of inaction and concessions to the automobile industry, President Bush proposed new restrictions on gasoline volatility and engine vapor losses as well as tighter control of tailpipe emissions to curb the release of ozone-causing pollutants from gasoline-powered vehicles. Also contained in the 1989 proposal was a ten-year plan for phasing in alternative-fuel vehicles in nine urban areas where ozone pollution is most severe.[1]

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1. Pollution-control expenditures are contained in Council on Environmental Quality, *Environmental Quality—1979*, Tenth Annual Report (Washington, D.C.: U.S. Government Printing Office, December 1979).

Congress has been deadlocked since 1982 over a new clean-air bill as lawmakers in both the House and Senate have blocked legislation in an attempt to protect economic interests back home.

State and Local Programs

To be effective, national programs to prevent and abate air pollution must function at all levels of government. Many states have tightened pollution-control standards or expanded their coverage to new pollutants or activities. State governments possess regulatory authority to combat air pollution and often set a precedent for federal action. California's automobile-emission laws, stemming from air-pollution problems in the Los Angeles basin, are an example. Air-pollution laws in California set the stage for national legislation in this area. The federal government has traditionally looked to the states for effective control over pollution in order to encourage comprehensive regional programs.

But few states except California have been willing to get out in front of the federal government on initiatives against air pollution. However, in 1989, officials in eight northeastern states began working to adopt California's strict air-pollution standard for cars and trucks in an effort to reduce smog.[2] Within the 8-state region, 15 cities or rural areas had been named by the EPA as failing to meet ozone standards and 11 cities as violating the standard for carbon monoxide. Individual states may adopt the entire set of California standards with permission from the EPA, but to avoid the confusion and costs of 50 potentially different standards, no other state has been allowed to develop its own plan.

With the federal Clean Air Act, the costs of state control programs have risen even more steeply than the costs of local programs since the act places the primary control responsibilities on the states. However, it should be noted that dollars expended by states do not fully depict the adequacy of state efforts. In determining the extent of such efforts, factors such as population, pollution sources, past accomplishments, and organizational efficiency must be weighed heavily.

At the local level, early efforts to combat air pollution centered on only one aspect of the problem–smoke emissions from fossil fuels, primarily coal. Chicago and Cincinnati led the way with smoke-control laws in 1881. By 1912, most of our largest cities had similar laws. Although a few states involved themselves directly in control programs, regulation for the most part remained a local concern until the mid-1950s. But even on the local level, air-pollution

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2. A. Myrick Freeman, III, "The Benefits of Air and Water Pollution Control: A Review and Synthesis of Recent Estimates" (A report prepared for the Council on Environmental Quality, December 1979). This report is recommended to those who wish to examine the benefit claims presented in the text as well as the wide disparity in the results of many studies.

control continued to be primarily a matter of controlling smoke emissions. Even with increased knowledge of gaseous pollutants, coupled with the realization that the problem should no longer be thought of as essentially local in character, much of the authority for setting air-quality standards and for translating them into emission limitations and compliance schedules is still largely delegated to the local level.

The success of both state and local efforts is mixed, but there is a marked trend toward improvement. Although state and local governments spend billions of dollars annually for air-quality control, only with continued federal funding is it likely that they can sustain and increase their pollution-control activities.

OPTIMIZING AND CONTROLLING POLLUTION

Two very difficult problems faced by environmental policymakers concern the amount of pollution that is acceptable to society and the methods by which predetermined pollution limits may be achieved.

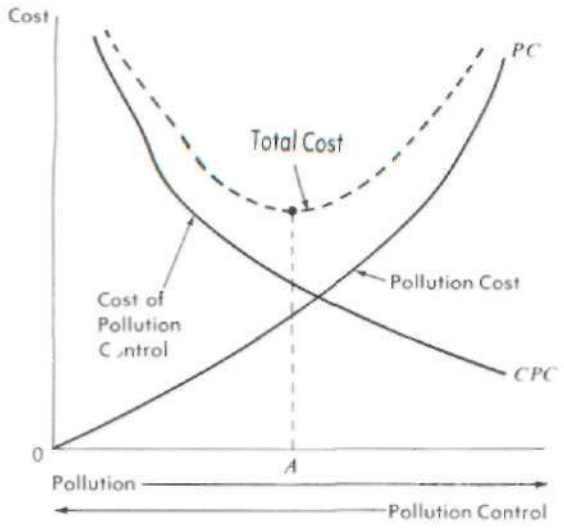
Optimal Pollution Levels

Recognizing that a pollution-free environment is not a rational objective, government must set standards that allow for the existence of tolerable amounts of pollution. Not unexpectedly, the lack of an all-or-nothing standard has generated heated controversy over the levels of pollution that society should permit. As pointed out in this chapter, polluted air and pollution control are both costly choices for this nation. The objective, therefore, is to minimize the sum of both costs and in so doing determine the optimum amount of pollution.

Figure 10-1 graphically presents the economic approach to arriving at the optimum level of pollution. The curve labeled *PC* represents the increased cost to society of additional amounts of pollution and is read from left to right. The *CPC* curve refers to the increased cost to society of controlling additional pollution emissions and is read from right to left. By adding the cost of pollution to the cost of pollution control, a total cost curve can be constructed. The minimum point of the total cost curve indicates that the optimum level of pollution occurs at point *A*. To reduce the pollution level below point *A* would be noneconomic because the extra cost of pollution control would exceed the extra cost to society of the additional pollution. On the other hand, at pollution levels greater than point *A*, the social cost of the additional pollution is greater than the additional cost of preventing it. In both cases, the total cost function would be higher than the minimum cost at point *A*.

FIGURE 10-1

Optimizing Pollution Levels



The major drawback in using this analysis in the making of public policy lies in the measurement of costs. Although it is relatively easy to measure the control costs of preventing pollution, it is far more difficult to calculate the costs resulting from additional levels of pollution.

CONTROLLING POLLUTION

Although our approach to controlling air pollution has been through regulation, other proposals call for different approaches. Four other often-mentioned approaches are direct payments, effluent fees, market permits, and emissions trading.

Direct Regulation. Direct regulation is the most often used approach. Usually, a governmental body establishes minimum acceptable levels and requires firms to meet these standards. One advantage of direct regulation is the ease with which it is administered, mainly because noncompliance is easily detected. A second advantage is low cost. Finally, direct regulation is considered equitable by its proponents, since all firms in an industry face the same standards.

Opponents of direct regulation argue that little incentive exists for improving air standards once the minimum standards are satisfied. Also, the system may not be as equitable as it seems because while all firms face the same standards, individual firms have different cost structures and impose different costs on society. The application of general standards can result in too much control in some cases and too little in others.

Another drawback to the direct-regulation approach is the heavy burden it places on government in both deciding what the regulations should be and investigating violations. To place these responsibilities in the hands of government is to encourage strong political lobbying for "proper" regulation.

Direct Payments. This approach entails granting firms tax reductions and subsidies for the acquisition of pollution-control equipment. Direct payments may take the form of local property tax exemptions on pollution-control equipment, accelerated depreciation of control equipment, or tax credits for investments in control devices. The primary purpose of the direct-payments approach is to lessen the financial burden involved in acquiring control equipment by providing an incentive to invest. The biggest advantage of the direct-payments plan is its acceptability to the business sector because firms and industries see this plan as the least painful alternative.

There are, however, several disadvantages associated with the direct-payments approach. First, even with a subsidy there is little incentive to acquire pollution-control equipment because it is inherently unprofitable. It adds nothing to revenue and does not serve to reduce the costs of production. Second, it is difficult to determine how much subsidy firms should receive. Third, there is no incentive for firms to effectively use or maintain the pollution-control equipment once it is acquired. Fourth, a direct-payments approach ignores the possibility of other adjustments in the production process, or the product itself, that may prove more beneficial to society. In essence, the direct-payments plan is one in which society pays the producer to prevent the producer from imposing pollution costs upon society.

Effluent Fees. The third approach to pollution control involves the use of effluent fees or taxes. In all instances, the agency levying a fee must estimate the indirect costs of pollution in order to calculate the appropriate fee. When implemented, the fee is adjusted to reflect the marginal cost to society of pollution-causing activities. Thus, if the fee equals the marginal social cost, the external costs of production will be internalized. Through the effluent fee, the producer is paying society for the indirect costs imposed upon it.

If effluent fees result in higher prices, they are passed on to those for whom the product is produced. This differs markedly from the direct-payments plan, in which the cost of pollution control is passed along to society as a whole.

Advocates of the effluent-fees approach claim that the obvious difficulty of measuring indirect costs is outweighed by several major advantages. First, this approach provides the incentive not only to reduce emissions at a cost less

than the effluent fee, but also to develop less costly control equipment. The effluent-fees approach is also a decentralized approach insofar as it places the burden of investigation and decision making on management and not government. This approach also has the advantage of providing revenue to control agencies. Finally, the effluent-fees method is flexible in that fees can be altered according to such changing factors as weather, time of day, and time of year.

Market Permits. A fourth approach to pollution control entails the creation of a marketplace for the buying and selling of pollution rights. After having made a decision on the maximum allowable total discharges of a pollutant within the designated market area, a pollution-control agency could print and auction off pollution permits. Firms could purchase permits either in the original auction or in a secondary market created by firms and individuals who had previously purchased permits in the original auction. Only after having acquired the right to pollute could a firm discharge pollutants into the atmosphere. Noncompliance would be handled in much the same way as violations of the direct-regulation approach.

The market-permits approach provides an economic incentive factor somewhat similar to that of the effluent-fees approach. Firms that discharge pollutants would have the incentive to seek pollution-free production processes in order to avoid the purchase of expensive pollution permits. Polluting firms would have to compare the costs of pollution-control equipment to the cost of permits. In cases where the cost of reducing or eliminating air pollution is less than the cost of permits, pollution would be reduced. Where the acquisition of pollution rights is more economical, firms would forsake pollution-control expenditures. But, unlike the effluent-fees approach, the market-permit approach fixes the total amount of pollution. Therefore, the prices of pollution permits can fluctuate widely, depending on the supply and demand in the marketplace at a given time.

Like effluent-fees, the market-permits approach automatically encourages reductions from firms that can inexpensively reduce pollution, minimizing pollution control's social cost. Hence, of the approaches presented, economists favor the effluent-fees and market-permits approaches because they incorporate economic incentives to reduce pollution. Although recognized as theoretically sound, these approaches had been shunned for the most part in favor of the more simplistic and practical direct-regulation approach.

Emissions Trading. In recent years the EPA has initiated market-based economic incentives to control pollution. Four different but interrelated incentives-based mechanisms presently comprise the agency's emissions trading system: bubbles, banking, offsets, and netting. Each technique incorporates the incentives of the marketplace with the "command and control" approach of direct regulation. In adopting market incentives long advocated by economists, the EPA not only seeks to develop innovative and less costly methods

of meeting current pollution standards, but also hopes to induce industries to control pollution beyond the letter of the law.

The *bubble* mechanism allows existing plants or groups to be excused from controls in one or more emissions sources in exchange for compensating controls of other, less costly to control, sources. The concept can be viewed as plants covered by an imaginary bubble dome with all pollutants being discharged from a single emissions pipe protruding through the domed roof. As long as pollution escaping from the bubble does not exceed stated limits, companies can choose which pollution source to control and how.

Once a firm reduces emissions through approved programs, it can gain emission-reduction credits (ERCs) that can be held aside for the firm's own current or future expansion, or sold in the marketplace to another firm in the region. This process of storing ERCs is known as *banking*.

If the company decides to sell its banked credits to another firm, it is said to *offset* its discharge permits. The impetus for creating offsets resulted from the dilemma created by the Clean Air Act, which appeared to prohibit growth in areas already in violation of primary air quality standards. Thus, if a firm seeks to locate a new plant in a particular area already in violation or pollution standards, the firm would have to seek out existing sources of pollution and offer to compensate them for banked credits. Therefore, the offset policy creates a market for pollution rights, with reduction in pollution undertaken by plants that can do so most cheaply.

Netting is similar to offsetting except that netting applies to firms that must reduce certain pollutants from specific sources in order to expand the use of other sources of the same pollutant. In essence, the firm is trading off pollution rights within itself.

The results of emissions trading are indicative of the workability of combining marketplace incentives with compliance standards. In Bristol, Pennsylvania, a 3M factory used the bubble concept to reduce emissions from one source by 1,000 tons a year more than would have been achieved by direct regulation. Savings to the company were estimated at $3 million in capital costs and over $1 million a year in operating costs.

The General Electric Company's Louisville plant faced a decision to spend $1.5 million to install pollution-control equipment to retrofit an old process line or shut it down. Instead, GE opted to lease emissions credits banked by International Harvester, which found compliance relatively easy. The arrangement cost GE $60,000 instead of the estimated $15 million. The Narragansett Electric Company in Rhode Island recorded annual savings of $3 million and 600,000 barrels of crude oil by trading ERCs, and Armco Steel saved approximately $15 million in capital costs alone for particulate-abatement equipment.

In a 1982 report, the Government Accounting Office stated that an open market in air-pollution entitlements could in some instances save industry as

much as 90 percent in pollution abatement costs as compared to direct regulation, without sacrificing the benefits of good air quality.

ACID RAIN

In recent years the nation has become concerned with another form of air pollution—acid rain. Acid rain is not a new environmental phenomenon; it has lately gained widespread attention because of its adverse impact on lakes, streams, forests, and soil. Moreover acid rain is a problem, not only in the United States, but throughout the industrialized nations of the world.

Rain and snow are normally slightly acidic, but rain falling on much of the northeastern United States and southeastern Canada is much more acidic than that resulting from natural causes. Acid rain is the comprehensive name given to the precipitation of acids in rain and snow along with moisture produced by acidic clouds, dew, and fog. The major acids involved in acid rain are sulfuric acid and nitric acid. These are formed in the atmosphere as a result of reactions involving sulfur dioxide, nitrogen oxides, and water. Sulfur dioxide is a key-product of the burning of coal, gas, or oil in generating plants and industrial boilers, while nitrogen oxides are emitted by automobiles, trucks, and other mobile sources.

Scientists have few hard facts about the specific causes and effects of acid rain. The technical difficulties in understanding acid rain can be traced to its general nature. First, the sources of the principal pollutants found in acid rain are widespread, and diverse, and are of both human and natural origin. In most ecosystems, the relative contributions of each pollutant cannot be easily distinguished. Second, unlike localized air pollution, acidic compounds are transported hundreds of miles before being deposited. The complicating effects of local emissions, variable wind patterns, and atmospheric chemical transformations preclude simple correlations between specific sources and specific effects. Third, the gases emitted into the air are not necessarily those that ultimately damage the environment. Sulfur and nitrogen react in the atmosphere with oxidants, sunlight, water, and heavy metals before being transformed into sulfuric and nitric acids. Chemical conversions of this sort complicate regulatory attempts to define how and where emissions should be controlled. Fourth, because environmental damage from acid rain may be cumulative over long periods of time, quantifying its effects is difficult using short-term data.

The lack of a clear understanding of the acid-rain problem does not mean that there is no cause for concern. Scientists point out that at the present time the major demonstrated effects of acid rain are in aquatic ecosystems. Acid rain is killing fish in small high-altitude lakes in the Adirondack region of New York and eastern Canada. These lakes tend to lie in drainage basins underlain by granite and with little soil cover. As a result, runoff into the lakes is swift,

and they are not able to neutralize the relatively high concentrations of acid. An estimated 25 percent of the Adirondack's lakes and ponds are too acidic to support fish, and 50 percent of the streams in the mid-Atlantic coastal plain area are threatened. In Canada, the Department of the Environment reports that approximately 14,000 lakes are almost fishless. Nearly 50 percent of southern Norway's fish population has disappeared, while 20 percent of Sweden's 85,000 lakes are damaged.

Little is known of the effects of acid rain on terrestrial systems. Currently no direct evidence has been found to connect forest damage or agricultural crop damage with acid rain. Metals, paint systems, stone and other materials are vulnerable to acid rain, but their life spans are related to other factors, such as sunlight, temperature, and the life of the structure of which they are parts. Again, our knowledge of the extent to which acid rain is responsible is very limited.

Although the northeastern part of the country appears to experience the worst acid rainfall, it is also found in the Midwest and in West Coast cities. In the Northeast, the average pH (acidity) of rainfall is now between 4.0 and 4.5, with some rainfalls having a pH of 3.[3] This is approximately equivalent to the acidity of lemon juice or vinegar. Several environmental studies indicate that Pennsylvania experiences the highest level of acid precipitation in the nation. Areas north and east of Pittsburgh reported record levels in 1987. The highest level of all was recorded at a monitoring station in Huntington County, where acidity was measured at an average of 4.08 pH. This level is 33 times more acidic than unpolluted rain. High acid-rain levels in Pennsylvania suggest that, contrary to popular perception, pollution that originates in one region doesn't only drift away to produce air-quality problems in other areas. As in Pennsylvania, acid rain may also fall on areas close to its source.

Because coal is considered a major culprit, residents in the Northeast and Canada blame Ohio, Illinois, and West Virginia, which have extensive coal-fired power plants and other pollution sources. Naturally the coal-mining and electric-utility industries located in these states are quite sensitive to such criticism because they have spent an entire decade faced with tough and costly energy-versus-environment decisions. The thought of massive expenditures and greater managerial uncertainty in the 1990s is not a welcome one.

The problem of acid rain has been difficult to resolve because of the wide range of socioeconomic costs and benefits accruing to different geographic areas. But action is also stalled because so few economical options exist to reduce acid rain. The three known emission-control techniques for reducing sulfur-dioxide emissions from coal-fired plants are coal-washing, coal-switching, and flue gas-scrubbing. Coal-washing is not very effective. Coal-switching—the switch from high sulfur coal found mainly in the East and Midwest

3. Normal rainfall has a pH of 5.6. Pure distilled water has a pH of 7, while battery acid has a pH of 1.

to low-sulfur coal from the Western states—is the easiest to implement but could lead to sharp reductions in production and employment in already-depressed Appalachia. Scrubbing is effective but expensive. Although nearly 150 scrubbers have been installed, smokestacks in the United States continue to emit some 20 million tons of sulfur dioxide a year. As more sulfur dioxide is removed from smokestack discharges, the more expensive the process becomes due to the law of diminishing returns. The use of scrubbers is also costly to consumers because it results in significantly higher electricity rates.

Most states are awaiting federal action on what they perceive as a national issue. But during the 1980s, the federal government's main approach was to support studies on acid rain but otherwise take no action. Between 1971 and 1988, an estimated 3,000 studies of acid rain were conducted. With the election of George Bush as President, however, the federal government may step up action to reduce acid rain. President Bush announced that his administration would honor a $2.5 billion commitment to Canada to develop technology for burning coal more cleanly and called for legislative action on acid rain. He also proposed legislative action that would require cutting sulfur-dioxide emissions at 107 electric-utility plants in 19 states by 10 million tons by the year 2000. Costs would be $700 million annually during the first five years and $3.8 billion annually over the second five years. Utilities may meet their emission targets by installing new technology, such as scrubbers, by switching from high-sulfur coal or, by buying or trading for emission credits from other utilities that have exceeded their targets. This proposed legislation provides Congress with the executive support it has sought to initiate action.

THE GREENHOUSE EFFECT

During the 1970s, scientists began expounding their views on the possibility of the planet experiencing a "greenhouse effect" some time during the 21st century. Although once considered highly speculative, greenhouse theories are now gaining increased respect and attention. As evidence mounts that the potential problem is indeed real, the topic has become a major concern of environmentalists within the scientific community.

Simply put, the greenhouse effect refers to the steady increase in the earth's temperature resulting from human activities. Once again, the burning of fossil fuels seems to be the major cause because in the process carbon dioxide (CO_2) is released as a by-product into the earth's atmosphere. When joined by gases such as chlorofluorocarbons, nitrous oxides and methane, CO_2 serves to trap heat around the earth much like glass in a greenhouse. In a greenhouse, sun enters through the glass but heat does not escape. So too, CO_2 in the atmosphere absorbs rather than reflects infrared radiation that produces

heat. Trapped in the atmosphere, this heat increases the earth's temperature—the greenhouse effect.

Over an extended period of time, the greenhouse effect could produce dramatic economic, social, and political consequences. Farming, shipping, international trade, energy policies, military strategies and the distribution of population are all affected by climatic changes.

Evidence

Since the Industrial Revolution, the earth has experienced a warming trend, concentrations of CO_2 in the atmosphere have risen by approximately 25 percent, and average world temperatures have increased by 1 degree Fahrenheit. In 1987, the average world temperature was higher than for any year recorded, and the decade of the 1980s has been the warmest in a century. In addition, the United States experienced extremely warm temperatures and severe drought in 1988. These phenomena are interpreted in many quarters as further evidence of the greenhouse effect at work.

With factories, cars, and power plants now emitting almost 6 billion tons of carbon into the world's atmosphere annually, many scientists see a continuing rise in the earth's temperature as inevitable unless preventive measures are taken. Otherwise, they argue, the earth's temperature could rise by 2 degrees Fahrenheit and possibly as much as 9 degrees Fahrenheit, by the middle of the next century. Although a temperature variation of 1–2 degrees Fahrenheit is considered normal over the short term, a long-term rise in the earth's temperature by that amount could increase the concentration of CO_2 in the atmosphere by 60 percent—double the amount that existed prior to the Industrial Revolution.

Because the greenhouse effect is a potential long-run problem, conclusive evidence of its inevitability is lacking, and its impact on nations throughout the world is uncertain. However, should the greenhouse effect materialize, striking changes could result.

Effects. Although a 2-degree Fahrenheit increase in average world temperature may seem insignificant, a change of this magnitude could cause major disruptions in various parts of the world. Like many averages, a 2-degree Fahrenheit increase conceals the extent to which more extreme conditions would occur in specific places and at specific times.

Despite being unable to predict the exact impact of the greenhouse effect, scientists foresee various changes of a general nature. Temperatures throughout the world would increase, with cold seasons getting shorter and warm seasons becoming longer. Interiors of continents would become drier and hotter, while coastal areas would experience increased rainfall. Low-lying areas, such as in the Netherlands, the Caribbean, and Florida could experience extensive flooding. But overall, the danger of rising sea levels throughout most

of the world may not be a serious threat in as much as the sea level is projected to rise by approximately 10–14 inches. Some areas of the world, such as Ethiopia, Chad, India, and Bangladesh, could experience greater rainfall. To the parched nations of Ethiopia and Chad, increased rainfall would be beneficial; but to India and Bangladesh, increased rainfall would produce severe storms and widespread flooding.

In the United States, the Midwest and Southwest could be devastated by hotter and dryer summers. With high temperatures in excess of 100-degrees Fahrenheit and a reduction in rainfall, U.S. self-sufficiency in many agricultural products would be threatened. With warmer weather in the Soviet Union, it is conceivable that the United States could be a net importer and the Soviet Union a net exporter of major food stuffs. It is also likely that the migration of households and industry from the colder climates of the Northeast and upper Midwest to the warmer climate of the Sunbelt would be reversed. Summer temperatures of 120–140 degrees Fahrenheit in Arizona, for example, could result in thriving communities becoming ghost towns in the next century. In Alaska, a partial thawing of the permafrost could jeopardize the oil pipeline and the entire oil industry, while creating havoc with the state's infrastructure.

Obviously there is a great deal of speculation concerning the impact of the greenhouse effect. But even if only a few of the previously mentioned changes were to occur, economies throughout much of the world could be affected. Preventive measures, however, are seen as costly and difficult to implement.

Preventive Measures. As can be seen in Figure 10-2, nearly 75 percent of the world's carbon-dioxide emissions are produced by the United States, western Europe, China, and Japan. Consequently, solutions to forestalling the greenhouse effect are not simple, for the cooperation of many industrial nations is required.

One obvious approach would be to drastically reduce the consumption of fossil fuels. Given present trends, world coal consumption is expected to increase by 40 percent and the demand for oil is expected to increase by 8 percent by the year 2000. Since eliminating or even sharply curtailing the use of fossil fuels is impractical in the short run, scientists and economists stress the need to improve energy efficiency. It is estimated that by improving worldwide energy efficiency by 2 percent each year, current CO_2 levels could be maintained for most of the next century.

A shift by power plants from coal and oil to natural gas would also be effective. Natural gas is a cleaner form of energy, and power plants using natural gas emit only 60–70 percent of the amount of CO_2 spewed into the air by coal and oil-fired plants. Another approach is to increase the use of nuclear power. With present technology, nuclear power remains the only large-scale substitute for fossil fuel. Nuclear power produces no CO_2 whatsoever. But unless public confidence in nuclear power is restored in countries such as the United States by the construction of safer, cheaper and simpler power plants, nuclear power promises only limited assistance.

FIGURE 10-2

Worldwide Carbon Dioxide Emissions, 1985

SOURCE: U.S. Department of Energy.

The planting of trees would reduce the level of CO_2 in the atmosphere, but it would take a massive number of new trees to produce the desired effect. Each year about 40,000 square miles of tropical forest are destroyed for fuel or land clearance. Much of this deforestation is occurring in the Amazon region of South America. Because trees consume CO_2 during photosynthesis, deforestation actually increases CO_2 levels in the atmosphere. Planting hundreds of millions of trees, however, is not a practical solution.

There are no easy solutions to preventing the greenhouse effect, and as long as it is considered speculative and a phenomenon that may occur seventy years or more in the future, corrective action in the short run is not likely. In addition, the greenhouse effect is a global problem whose solution requires the cooperation of countries throughout the world. Some countries, however, will actually benefit from the warming temperatures and may not support corrective action. On the other hand, those countries that are likely to experience economic disruptions are not anxious to implement corrective measures. At the present time, the United States views acid rain as a more serious and immediate problem than the greenhouse effect.

IMPACT OF CLEANER AIR

The implementation of the Clean Air Act has entailed major adjustments for both producers and consumers throughout our economy. Overall, even though aggregate output, income, and employment have not suffered significantly, pollution control has brought about noticeable changes in the composition of output and allocation of resources among industries.

Most manufacturing industries have found the increased burden of pollution control costly but manageable. The time period during which antipollution spending accounted for a large share of total investment expenditures was relatively brief for all but a few industries. As compliance with environmental regulations continues, spending for pollution-control equipment should decline in both absolute and relative terms.

Several large industries, however, have been seriously affected by antipollution requirements. Of particular concern is the extent to which capital investment aimed at meeting pollution control standards is squeezing out investment needed to modernize and expand productive capital stock. For example, it has been estimated that over the 20-year period ending in 1993, our domestic steel industry expects to install pollution-control equipment worth in excess of $8.2 billion in existing production facilities. The steel industry, however, is in dire need of modernization, and profits in recent years have not been sufficient to satisfy both investment needs. Consequently, the size of our domestic steel industry is shrinking as investment capital is being channeled elsewhere. This shift in resource allocation coincides with plant closings, industry unemployment, and conglomerate mergers. Despite increased protective tariffs and quotas on imported steel, the industry continues to suffer.

The electric-utility industry is also beset by a number of pressing problems, not the least of which is pollution control. Because of stringent regulations contained in the Clean Air Act governing the burning of high-sulfur coal, electric utilities are seeking efficient ways to convert "dirty" coal into "clean" coal. One way is to install smokestack scrubbers. Between 1980 and 1990, an estimated $127 billion in capital investment has been expended for this purpose. As concerns over nuclear power and acid rain intensify, resource allocation within the industry will entail increasingly difficult and costly decisions.

Within industries, individual firms continue to face adjustments. Pollution-control requirements have had varying impacts on individual firms within industries. In large part, the impact on individual firms is related to their market position. If the demand for a firm's product is highly inelastic, a large portion of control costs can be passed along in the form of higher prices. But, if many substitutes are available, the firm may have to decrease production and settle for lower prices. Over a longer period, firms with lower profits will experience

greater difficulty in acquiring capital for expansion purposes. Hence, their position in the industry will decline.

Small firms operating single plants appear most vulnerable, and a good number have ceased production. For the most part, these firms are inefficient and obsolete—marginal enterprises at best. In some cases a company owning several plants may close one because it is inefficient. The expense associated with pollution-control equipment provides as good an excuse as any for the company to eliminate one of its older, obsolete production facilities. The result is a loss of jobs and a decreased supply of the commodity.

Firms pass pollution-control costs to consumers in the form of higher prices. Higher-income families tend to allocate a larger share of their income for services, which by and large are not affected by pollution-control costs. Hence, lower-income families may well be penalized more severely than higher-income families by higher prices caused by increasing pollution-control costs.

CONCLUSION

After a decade of relegating air-pollution control to a low priority status, the federal government has given strong indications that the issue will be at the forefront of the political agenda in the 1990s. Both the Bush Administration and Congress are working for the passage of a new clean-air bill. But the challenge of cleaning the nation's air is much greater than ever before. With increased scientific evidence of the causes and effects of such pollutants as sulfur dioxide and carbon dioxide on the environment, the task is far more costly and complex than envisioned with passage of the Clean Air Act of 1970.

Air pollution is a global problem that has no respect for national boundaries. Acid rain, the greenhouse effect, and the deterioration of the ozone layer have surfaced as major concerns for the 1990s. The challenge for national leaders, policymakers, and environmental organizations all over the world, as well as for multinational companies, is to develop innovative and cost-effective approaches to global environmental issues.

Most of the easy solutions to air-pollution problems have been applied. The traditional approach of direct regulation can't deal effectively with the more difficult challenges of the future. Consequently, a continued shift from direct regulation to various approaches involving market incentive is necessary. The increased use of emissions trading is proving to be more cost effective and equitable than the simpler command-and-control approaches of earlier decades.

Public understanding and support will also be necessary because the battle against air pollution will entail painful adjustments in the economy. The costs of many items, such as cars, gasoline, chemicals, paper, electricity, and taxes, have already increased to reflect the costs of pollution abatement. More jobs may also be eliminated as marginal producers, finding it impossible to justify expensive control equipment, close their doors.

The fight against air pollution is proving to be costly, but in the long run it will be cheaper than the costs associated with a policy of limited action. In the final analysis, it all depends upon the price we are willing to pay.

QUESTIONS FOR DISCUSSION

1. In compliance with the Clean Air Act of 1970, automobile manufacturers have made substantial reductions in air pollution emitted by new automobiles. What costs have been associated with these improvements?
2. If need be, should economic growth be sacrificed for pollution control?
3. From an economic point of view, do you believe we overestimate our country's productive capacity when we ignore air pollution in calculating the gross national product? Give specific reasons for your answer.
4. How have rapid advances in technology influenced the air-pollution problem?
5. What approach to the acid rain problem would you support? How would producers and consumers be affected by your approach?
6. Does your community suffer from an air-pollution problem? If so, what is the nature and cause of such pollution?
7. What costs and benefits might accrue to the United States from the "greenhouse effect"? Should steps be taken in the near future to stall the projected increase in the earth's temperature?

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11

CRIME

WHAT ARE THE COSTS?

In recent years crime has surfaced as one of the nation's greatest concerns. This is not to imply that the problem of crime is new, for crime is as old as humanity itself. What is disconcerting to Americans is the dramatic rise in the frequency and severity of criminal activity. But despite the gravity of the crime problem, only recently have economists applied their analytical and empirical skills to the analysis of criminal activity. Traditionally crime and criminal behavior have been largely the subject matter of sociologists and criminologists. Because the economist's treatment of the topic differs markedly from the dominant traditional views espoused by sociologists and criminologists, a lively and healthy controversy has arisen among the professionals of several disciplines.

It should be clear in view of the multifaceted nature of the crime problem that economic analysis alone cannot pretend to provide all of the solutions relating to the causes, prevention, and control of crime. But there is no doubt that an understanding of economics does provide greater insight into the determinants of criminal behavior as well as the steps that might be taken to

efficiently allocate our nation's resources to the control of crime. Thus, the major contribution of economic analysis should lie in the development of broad policy guidelines that have the effect of reducing criminal activity.

CRIMINAL ACTIVITY

The most straightforward definition of crime is that it is any act in violation of the law. Since criminal law reflects the fundamental values of a society, the definition of what constitutes a criminal act varies from place to place over time. Although crime is prevalent in all modern societies, especially those which are urban and industrialized, particular forms of crime relate to the manner in which a society is organized. As a democratic, market-oriented nation, the United States protects individual political, and economic freedoms; emphasizes the value of materialism; and rewards individual economic incentive. At the same time, these values not only serve to increase the motivation for criminal activity, but also permit the freedom to engage in an illegal act before being confronted with punitive measures.[1]

Although crime can be defined rather easily, the distinction between criminals and noncriminals is more complex. If we simplistically conclude that a criminal is one who has violated a law, then one would reasonably assume that nearly everyone reading this book, as well as its authors, can be classified as criminals. If this seems somewhat farfetched, we might ask the reader if there has not been an occasion when he or she has driven in excess of posted speed limits, parked illegally, or been guilty of jaywalking. Although in the preponderance of cases we all escape detection and citations from police officers, the point is clear: Everyone commits acts that violate the law and thus are criminal. Yet they do not think of themselves as criminals and, more importantly, neither does society. According to a national survey conducted by the President's Crime Commission, 91 percent of all adult Americans admitted they had committed acts for which they might have received jail sentences.[2] But the labeling of a person as a criminal only occurs when an individual violates a set of social norms that are backed up by strict sanctions. A criminal, therefore, is one who negatively evaluates the serious costs of an act on what society deems to be its best interests. Crimes against people, property, and society as a whole constitute acts that our society does not accept as being part of normal conduct.

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1. In a dictatorial society, individuals may be incarcerated on the grounds of being likely to commit a crime.
2. President's Commission on Law Enforcement and Administration of Justice, *The Challenge of Crime in a Free Society* (Washington, D.C.: U.S. Government Printing Office, 1967).

EXTENT OF SERIOUS CRIME

Crime can be classified in numerous ways. The source most often referred to for crime statistics is the FBI's *Crime in the United States*. These annual reports present data on major crimes classified into two major groups: violent crime and property crime. Violent crimes are serious crimes committed against people and include murder, rape, robbery, and assault; property crimes include burglary, larceny, and vehicle theft. Table 11-1 presents statistics indicating the number and types of serious crimes for selected years between 1970 and 1988. The fact that of the nearly 14 million serious crimes recorded in 1988, property crimes accounted for 12.3 million, or 88 percent of the total, attests to the significance of economic motivations in the commitment of serious criminal offenses. Figure 11-1 shows the distribution of crime offenses in 1988. But even this approach tends to underestimate the economic aspects of serious criminal activity because the commission of recorded violent crimes against people is in many instances incidental to obtaining money, property, or both.

TABLE 11-1

Crime and Crime Rates, by Type, Selected Years 1970–1988

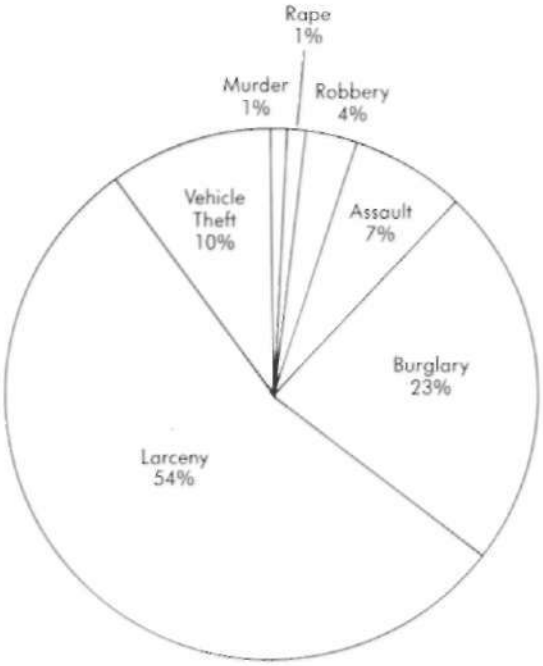
		Violent Crime					Property Crime[a]			
Year	Total	Total	Murder	Rape	Robbery	Assault	Total	Burglary	Larceny	Vehicle Theft
Number of offenses (000s):										
1970	8,098	739	16.0	38.0	350	335	7,359	2,205	4,226	928
1973	8,718	876	19.6	51.4	384	421	7,842	2,566	4,348	929
1976	11,350	1,004	18.8	57.1	428	501	10,346	3,109	6,271	966
1979	12,250	1,208	21.5	76.4	481	629	11,042	3,328	6,601	1,113
1982	12,974	1,322	21.0	78.8	553	669	11,652	3,447	7,143	1,062
1985	12,430	1,327	19.0	87.3	498	723	11,103	3,073	6,926	1,103
1988	13,923	1,566	20.7	92.5	542	910	12,358	3,218	7,708	1,433
Rate per 100,000 inhabitants:										
1970	3,985	364	7.9	18.7	172	165	3,621	1,805	2,079	457
1973	4,154	417	9.4	24.5	183	201	3,737	1,223	2,072	443
1976	5,287	468	8.8	26.6	199	233	4,820	1,448	2,921	450
1979	5,566	549	9.7	34.7	218	286	5,017	1,512	2,999	506
1982	5,604	571	9.1	34.0	239	289	5,033	1,489	3,085	459
1985	5,207	556	7.9	36.6	209	303	4,651	1,287	2,901	462
1988	5,664	637	8.4	37.6	221	370	5,027	1,309	3,135	583

[a]Sufficient data are not available to estimate totals for arson.

SOURCE: *Crime in the United States* (1989).

FIGURE 11-1

Crime Index Offenses, 1988



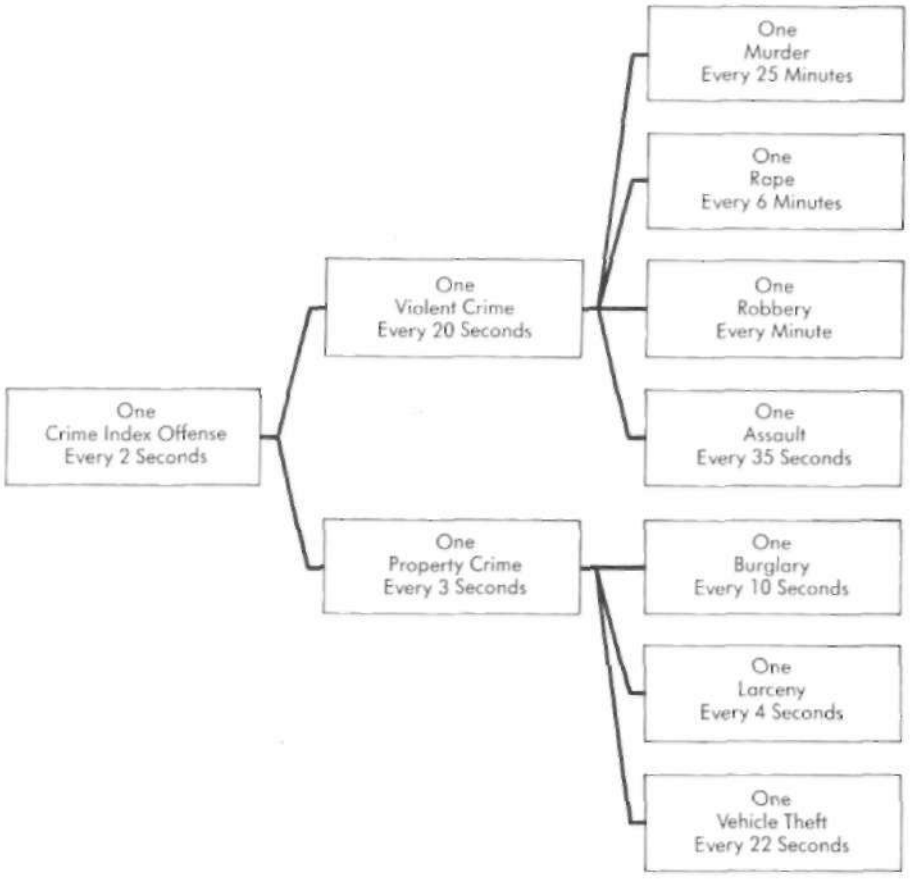
SOURCE: *Crime in the United States* (1989).

Is crime increasing at epidemic rates as some suggest? Calculations made from Table 11-1 indicate that the number of offenses increased by 72 percent between the years 1970 and 1988. Figure 11-2 contains information relating to the frequency of serious crimes. In 1988, a violent crime occurred in the United States every 20 seconds, whereas a property crime took place, on average, every 3 seconds. But despite the frequency of criminal activities, caution should be exercised prior to drawing conclusions based upon crime statistics. A better interpretation of the data produced by the FBI can be made if the following four factors are kept in mind.

First, a truer picture of the changing crime rate is one that relates changes in the number of crimes to changes in population over a given time period. The data in Table 11-1 show that on the basis of crimes per 100,000 population, crime increased by 42 percent between 1970 and 1988. The approach that measures crime rates per 100,000 inhabitants shows that the extent to which

FIGURE 11-2

Crime Clock, 1988



SOURCE: *Crime in the United States* (1989).

crime has increased is less dramatic than calculations based on the absolute number of criminal activities. Nevertheless, the figure remains a formidable and growing one.

Second, the validity of the statistics depends upon the victims reporting crimes to local police departments, and local police departments in turn reporting them to the FBI. In 1970 the number of agencies reporting crimes to the FBI totaled approximately 6,000, but by 1988 this number had increased to nearly 12,000 and now includes 95 percent of all agencies in the nation.

Consequently, some of the increase in crimes is the result of a more extensive reporting base and not solely due to an increase in criminal activity. In any event, the FBI claims to only report crime statistics and does not vouch for the reliability of the figures.

Third, the statistics cover only the eight crimes and should not be taken as a yardstick for total criminal activity. Excluded from the crime reports of the FBI are crimes that are far more numerous and in some cases just as serious as the eight recorded crimes. Considered serious but excluded from the report are such offenses as drug trafficking, drunk driving, vandalism, assaults against family and children, fraud, embezzlement, and white-collar crimes in general. In addition to these offenses, *victimless* crimes are also excluded from the index. Victimless crimes generally involve some form of illegal behavior rather than criminal action against people or property. Examples of victimless crimes include prostitution, public drunkenness, gambling, disorderly conduct, and certain drug-related offenses. It is estimated that victimless crimes account for approximately 40 percent of all arrests, and of the victimless crimes, drunkenness, disorderly conduct, and minor drug offenses are by far the most prevalent. Although they constitute behavioral forms of activity that do not in themselves involve criminal action against people or property, victimless crimes should not automatically be dismissed as minor offenses. In addition to producing heavy costs to society in general, the nature of some forms of illegal behavior often leads to more serious crime. Drug addiction, for example, is a victimless crime that can lead to burglary, larceny, robbery, and even murder, while drunkenness frequently results in vehicular homicide.

Fourth, the definition of criminal behavior changes over time and between places. A criminal act undertaken in one year may not be judged criminal in another, or vice versa. Laws pertaining to marijuana use are a case in point. Also some forms of gambling, such as off-track betting, gaming tables, and lotteries are legal in some states and illegal in others.

COMPUTER CRIME

Although not classified as a serious crime in the *Crime in the United States* reports, the general area of computer crime deserves attention. Computer crime is not a new phenomenon, for it began with the emergence of computer technology in the 1940s. What is new about computer crime is the widespread and sophisticated methods used to commit crimes previously thought to be extremely difficult, if not impossible. Without a doubt, the growing explosion in personal computers and computer literacy has made the potential costs to society from computer crime enormous.

Computers have been used in most types of crime including fraud, theft, larceny, embezzlement, bribery, burglary, sabotage, espionage, and extortion.

Computer crime has occurred in military systems as well as engineering, science, and private business systems. Computer crime goes beyond what is thought of as white-collar crime. It sometimes includes violent crime and jeopardizes human life and well-being.

The confusion as to what constitutes computer crime stems from the fact that computer crimes differ from traditional crimes with respect to the occupations of perpetrators, environments, methods, forms of assets lost, and geography. In this sense, computer technology has engendered a new kind of crime.

Computer technology has created new occupations that extend the traditional categories of criminals to include computer programmers, operators, tape librarians, and technicians, all of whom function in the environment in which the crimes occur. New automated methods develop and change rapidly. The targets of computer crime are also new. Assets subject to criminal loss include electronic money as well as warehouse inventories, materials leaving and entering factories, and confidential information stored in computers.

In other criminal acts, time is measured in minutes, hours, days, weeks, months, and years. With the use of computers, however, crimes can be committed in milliseconds. Finally, geography no longer poses the constraint in computer crime that it does in other criminal acts. For example, a telephone with a computer terminal attached to it in one part of the world can be used to engage in a crime in an on-line computer system in any other part of the world.

What Is Computer Crime?

An acceptable definition of computer crime is that it includes any illegal act for which knowledge of computer technology by the criminal is essential. The critical distinction contained in this definition can best be understood through some examples. If an individual steals a computer terminal, the act would not be a computer crime, but a simple theft in the same sense as if a television set were stolen. Technical knowledge of the workings of the computer is not necessary to the act any more than similar knowledge of televisions would be in stealing a TV. Likewise, if an individual enters a bank and deceives a bank employee into transferring $10 million by computer from someone else's account into his or her own personal bank account in Switzerland, this, too, is not a computer crime. In this case, no fraudulent act was directly related to the computer, and no specific knowledge of computer technology was necessary on the part of the criminal. If, however, the individual gains access to the bank's computer codes and makes the transfer by giving instructions to the computer, a computer crime has taken place because this act required a knowledge of computer usage and protocol.

Until recently, computer crime mainly involved illegal access to monetary accounts. With increased computer literacy and popularity of home

computers, however, experts are warning of a growing computer crime wave. It appears that the target will be information rather than money. This has become particularly true of high school and college students who see the cracking of computer codes as a challenge rather than a criminal act. Teenagers using home computers have broken into computers belonging to a New York City hospital, the Defense Department, and an electronic-mail service, just to name a few. The total number of such offenses is unknown but undoubtedly large, and verified reports indicate that company secrets are being stolen, motor vehicle records for traffic violations are being erased, and scholastic records are being altered.

Unfortunately, society has looked upon computer-information raiders as geniuses, not criminals. But, in fact, breaking into someone's computer is little different from breaking into someone's home—an act society deems illegal. Society's passive stance in this matter is reflected in the 1983 movie *War Games*, which popularized the underground culture that views breaking into a computer system as an indoor sport.

Cost of Computer Crime

Computer thieves now steal an estimated $3–5 billion annually in the United States, with the average computer theft in excess of $500,000. But this sum represents only a fraction of the true cost of computer crime. In 1989, Americans spent an estimated $600 million for goods and services that protect computer information, a figure that industry analysts expect to approach $1 billion by 1993. Various forms of protection include insurance, sophisticated protective software, security personnel, and underground facilities. As the economy increases its reliance on computer systems and electronic networks, computer crime will undoubtedly become more costly.

CRIME PATTERNS

A general profile of crime across the country indicates that it is mainly an urban phenomenon and that criminals are likely to be young, male, and nonwhite. FBI statistics showing crime rates for violent crime and property crime according to city size clearly indicate a direct relationship between crime rate and city size.

Urban areas contain large numbers of people at both extremes of the income scale: the very rich and the very poor. The obvious wealth of affluent families makes criminal activity appear very lucrative to the large number of poor concentrated in our large cities and suffering from slum conditions and economic desperation. Several studies cited by the President's Commission support the view that individuals at the lower end of the income ladder commit

most of the serious crimes in cities. Research conducted in Philadelphia found that 90 percent or more of the criminal homicide offenders, rape offenders, and robbery offenders were persons ranging on the economic scale from the unemployed to skilled laborers.[3] A separate study in which a comparison was made of the crime rates of male youths from both high- and low-income areas of Philadelphia supports the contention that there is an inverse relationship between violent crimes and household income.

Age and sex are also important factors in violent crimes. Table 11-2 depicts the number of arrests by age and sex for 1988. Approximately 28 percent of all individuals arrested for serious offenses committed in 1988 were "juveniles" (young people under 18 years old). Of the youths arrested for serious crimes, 79 percent were male. Many of those arrested were not yet teenagers. The total number of juvenile arrests in 1988 for serious crimes was about 542,000. Young people under 18 accounted for 10 percent of those arrested for murder, 22 percent of those arrested for robbery, 15 percent of those arrested for forcible rape, 33 percent of those arrested for burglary, 40 percent of those arrested for motor vehicle theft, and 30 percent of those arrested for larceny. Of all the aspects of crime today, what alarms Americans most is the extraordinarily high rate of criminality among our nation's youth.

TABLE 11-2

Persons Arrested by Charge, Sex, and Age, 1988
(In thousands)

	Male		Female	
Charge	Total	Under 18	Total	Under 18
Serious crimes	1,526.0	438.0	409.8	104.2
Murder	13.5	1.5	1.8	0.1
Forcible rape	25.4	3.6	0.3	0.1
Robbery	96.3	21.3	8.8	1.7
Aggravated assault	243.0	30.0	37.6	5.2
Burglary	278.0	93.5	25.8	7.6
Larceny	730.0	231.5	319.3	83.2
Motor vehicle theft	128.8	51.2	14.3	5.8
Arson	11.3	5.0	1.7	0.5

SOURCE: *Crime in the United States* (1989).

3. *Final Report of the National Commission on the Causes and Prevention of Violence* (Washington, D.C.: U.S. Government Printing Office, 1969) p. 22.

There is also a much higher crime rate for nonwhites than for whites,[4] but these differences are thought to be primarily the result of living conditions in our major cities. The central cities of most major urban areas have become increasingly nonwhite, and crime has always tended to be city oriented. Combined with a multitude of social and economic barriers, the urban environment continues to produce a higher crime-participation rate for the nonwhite population.

COSTS OF CRIME

The economic costs of crime are not easily measured, but estimates run well into the billions of dollars. A major problem in developing cost data is the uncertainty about what should be included in the cost of crime and how to arrive at dollar estimates. It is evident that different measurement approaches are required for the various types of crime.

The economic costs of crimes perpetrated against persons are difficult to measure because estimates of opportunity costs are necessary. The costs resulting from crimes against persons would correctly include (1) the present value of future income losses in the case of death or permanent disability that prevents future employment, (2) loss of earnings if disability is temporary, (3) medical expenses, and (4) the costs of pain and suffering to victims and their families. It is because of such measurement problems that the cost of such crimes as murder and rape are so difficult to grasp.

The measurement of economic loss in cases of crimes against property is somewhat less difficult because the costs of such crimes can be measured by the value of the lost or destroyed property. This is particularly true in cases of vandalism, sabotage, and arson, where there is physical destruction of property and a reduction of national wealth. From the standpoint of society, however, a complication arises in the case of theft because the value of stolen property does not change, only its ownership. Although costly to the victim, theft essentially involves a redistribution of income from the victim to the thief, resulting in a net economic loss to society of zero. The economic loss to individuals of crimes against property was $15 billion in 1988. Of this amount, an estimated $7 billion was accounted for by motor vehicle theft.

But the real economic cost of crimes against property is much greater than the value of diminished or destroyed property. With rising crime rates, there has been an increase in self-imposed costs to society for protection and deterrence of crime. To avoid being victimized by crime, people spend billions of dollars for such things as burglar alarms, property insurance, legal expenses, security personnel, and avoidance of high crime areas. Crimes against property

4. The crime rate measures the number of arrests per 100,000 whites as well as the number per 100,000 nonwhites.

also impose hidden costs on nonvictims in the form of higher prices for goods and services resulting from such activities as shoplifting, hijacking, robbery, and burglary.

Finally, the costs of crime imposed upon society include expenditures associated with public law enforcement and criminal justice. Some of these services would be required even if crime could be eliminated. Police services such as traffic control, crowd control, and the tracing of lost persons would continue without crime. But the bulk of the costs of law enforcement, justice, and corrections are linked to crime. The government costs of crime prevention and control are borne primarily by local governments.

OPTIMIZING CRIME LEVELS

As a starting point, it is safe to say that in a civilized society people prefer less crime to more crime and that the amount of crime is inversely related to the amount of resources allocated to crime control. Because crime control is costly, society must compare the economic loss resulting from criminal activity to the cost of providing better crime prevention and control. Theoretically, it would be possible to achieve a zero level of crime by devoting nearly all of our resources to law-enforcement agencies. However, the opportunity costs of foregone goods and services would be so overwhelming that it would be irrational to seek a crime-free society. Beyond some point, the cost associated with crime reduction exceeds the benefits. Instead, society prefers to opt for a tolerable level of criminal activity that optimizes resource allocation. In this sense, the annual budget appropriations of federal, state, and local law-enforcement agencies reflect the amount of crime society will accept in a given year, as well as the number of crimes it is willing to control. The optimal amount of resources can be examined by means of a cost-benefit analysis, as presented in Figure 11-3.

The economic damage resulting from additional acts of crime is measured along the marginal-cost-of-crime curve, whereas the increased cost of crime control is measured along the marginal-cost-of-crime control curve. The horizontal axis in Figure 11-3 represents both the amount of crime committed in a community (read from left to right) and the amount of crime control (read from right to left). The marginal cost of additional crime begins at point *T*, which reflects the maximum number of crimes committed with no control expenditures. At first this curve increases slowly, for in the early stages small increases in control expenditures can significantly reduce criminal activity. However, beyond some point the marginal cost of controlling additional crime is likely to increase more rapidly, indicating the extremely high extra cost of reducing additional crime as the number of crimes approaches zero.

The intersection of the two marginal functions at point *X* determines the socially optimal level of crime. At this point, a dollar expended to prevent an

FIGURE 11-3

Optimizing Crime Control Expenditures

additional criminal act is equal to a reduction in crime costs of one dollar. At crime levels greater than *OX*, the marginal benefits from crime reduction exceed the marginal costs of crime control. The result is that for every dollar society spends on law enforcement, society will save more than a dollar in damages. Thus, it is economically efficient to reduce crime by the amount *TX*, and to tolerate *OX* number of crimes. To reduce criminal activity below point *X*, however, is to act irrationally because the marginal cost of crime control exceeds the marginal dollar amount of damage due to crime.

Deciding how many resources to devote to crime prevention and control is not the only major allocation decision required. Once the total budget is determined, law-enforcement officials must then allocate resources among the various departments. Again cost-benefit analysis serves as a guideline. If, for example, an increase of $1.00 spent on controlling crimes such as murder and homicide yields a return of $3.00 in the form of reduced social cost, while the same $1.00 channeled into the vice squad benefits society by an amount of $1.50, then the dollar should be properly allocated to the homicide division.

The public position taken by some police officials, that police departments do not enact laws but only enforce them, is not sufficient grounds for employing resources as though all criminal offenses were of the same approximate severity. Police departments that seek to maximize the total number of

arrests, particularly in the easier cases involving victimless crimes, in order to present the image of an efficient police force are guilty of inefficiently allocating scarce economic resources. As long as economic resources for crime prevention and control are limited, then priorities must be established according to the costs of certain criminal acts and the benefits accruing to society from their reduction. Although the use of cost-benefit analysis in determining the social costs and social benefits associated with the various amounts and types of criminal offenses is difficult, in most cases reasonable estimates can be made.

CRIMINAL BEHAVIOR

Before considering possible public-policy approaches for reducing the extent of criminal activity, an economic analysis can also provide insight into several factors motivating criminal behavior. It is this particular facet of crime analysis that has triggered the greatest controversy.

Rational Behavior

Economics is concerned with choices and assumes that as individuals we possess the freedom to exercise our choices in the marketplace. Faced with numerous constraints that limit our freedoms, we nevertheless choose the best option, given the many choices available. To consistently act in such a way as to maximize the returns available is to behave rationally in the economic sense. This principle of behavior serves as a motivating factor for both consumers and producers.

Criminal activity may simply be another example of rational behavior since engaging in criminal acts is a matter of choice. The fact that an individual violates the law and risks a monetary fine or prison term does not necessarily imply irrational behavior, for every choice involves some costly risks. If costs associated with risk taking constituted irrational behavior, then many financial investors, entrepreneurs, steeplejacks, high-rise window washers, and Hollywood stunt performers would fail the rationality test. However, we usually do not think of their actions as being irrational because it is assumed that each of them arrived at the decision to engage in such activity after having examined the costs and benefits entailed in the next best choices. The fact that some criminals are apprehended and punished is not proof of irrationality any more than the fact that some steeplejacks fall off the Golden Gate Bridge. It only indicates that rationality need not assume perfect knowledge of future events. The implementation of a rational decision can entail mistakes, but unlike the steeplejack, the criminal usually has the opportunity of increasing professionalism by eliminating such mistakes in the future.

Cost-Benefit Approach

If rational behavior can be assumed, then economically motivated crime can be examined within the framework of benefits and costs. Consider first the expected benefits from a criminal act. Although in some cases nonmonetary returns in the form of prestige, revenge, or thrilling experiences serve as motivating forces, the gains from crime are usually of a monetary nature. Thus, for most participants crime is an income-producing activity, and it is anticipated income that constitutes the major benefit to the criminal.

As in other occupations, however, a person considering criminal activity must consider the costs of attaining the expected benefits, for it is net income, not gross income, that is important. One major cost to be considered is the opportunity cost of giving up the chance to use one's skills and abilities in legal employment. Foregone income from legitimate sources serves as the appropriate measure of income loss for the criminal. However, inasmuch as most criminals lack marketable skills and education, their foregone income from legal employment can be quite low. This fact has the effect of reducing the cost of criminal activity because crime may be viewed as the best available alternative.

In addition to foregone earnings from legal endeavors, the criminal must also weigh the costs of being arrested, convicted, and imprisoned. These are considered the "occupational" costs associated with crime. In essence, these are the probabilities and costs of failure.

The probability of being arrested for the crime is largely a function of the type of crime involved, the skills of the criminal, and a certain element of luck. The probability of being convicted depends upon the evidence presented and the skills of the defense attorney. A third probability estimate must be made for the likelihood of receiving a prison sentence if convicted, as well as the length of time to be served. Factors affecting the outcome include the severity of the crime, the criminal's past record, and the judge's view of appropriate punishment.

The cost of failure varies greatly among individuals. The nonmonetary cost of arrest, conviction, and imprisonment is the social stigma of having a criminal record and having "served time." For repeaters, however, these costs may be relatively low because their criminal records are already well established, and if they have been incarcerated previously, they are more easily able to adjust to prison life. But for many, the cost of imprisonment is largely the loss of income that results. Obviously the opportunity cost of imprisonment will be greater for highly educated and skilled people. The uneducated and unskilled may experience little income loss, particularly when free room and board are provided at public expense. The significant nonmonetary cost is the individual's loss of freedom, but again this cost is nonmeasurable and differs widely among those removed from society.

A hypothetical example of the rational decision-making process is illustrated in Table 11-3. Assume that two individuals, *A* and *B*, are independently considering a robbery, and that the target is a local retail store that remains open for business until 10 P.M. Routine surveillance plus inside information indicate that on Friday nights the store holds an estimated $15,000 in cash at closing time. Thus, $15,000 constitutes the marginal private benefit resulting from the robbery. Note that this sum represents only the anticipated value because the would-be robbers cannot be positive that on a given Friday night the store won't be low on cash. Having reasonably estimated the marginal private benefits from the robbery, each individual must calculate marginal private costs, for in order to perpetrate the robbery, anticipated benefits must exceed anticipated costs.

Cost calculations on the part of individuals *A* and *B* would require the multiplying of expected costs associated with crime by the probability of arrest, conviction, and imprisonment. For the sake of simplicity, assume that both *A* and *B* estimate the probability of being arrested at 0.4 and the probability of conviction at 0.5. By multiplying the two probability figures, the combined probability of arrest and conviction is 0.2. If *A* and *B* expect a prison sentence of ten years if arrested and convicted, then the expected sentence term is reduced to only two years (0.2 x 10) because there is only a 0.2 probability of arrest and conviction.

The next step is to approximate the foregone earnings from legitimate employment and then multiply the estimated income loss by the probability of arrest and conviction. If *A* calculates possible income loss of $3,000 per year, then *A*'s total foregone earnings would be $6,000 ($3,000 x 2 years). Assuming *B* estimates foregone annual earnings at $10,000, *B*'s total income loss becomes $20,000 ($10,000 x 2 years).

To arrive at net private benefits, costs must be deducted from benefits. The net gain from committing the robbery is $9,000 for *A* ($15,000 less $6,000)

TABLE 11-3

Expected Benefits and Costs of Robbery

	A	B
Private benefits Cash from retail store	$15,000	$15,000
Private costs		
Probability of being arrested	0.4	0.4
Probability of being convicted	0.5	0.5
Expected length of sentence	10 years	10 years
Annual income loss from legal employment	$3,000	$10,000
Expected private costs	$6,000	$20,000
Net private benefits	+$9,000	−$5,000

but is a negative $5,000 for *B* ($15,000 less $20,000). Therefore, *A* has a positive economic incentive to carry out the crime, while for *B* the act would be economically irrational. The deciding factor influencing the result is the greater opportunity costs of *B*'s legitimate earnings loss, inasmuch as both individuals had identical anticipated benefits and anticipated risks of arrest and conviction. On an annual income basis, *B*'s income loss would be more than three times that of *A*.[5]

In general, it can be concluded that anticipated future income is a function of human capital value. Therefore, individuals possessing higher stocks of human capital from investment in education or job skills are less likely to commit economically motivated crimes. Those with little in the way of acquired investment in human capital would expect a smaller flow of future income and would have far less to lose from committing acts of crime.

Thus, the motivating factors contributing to criminal behavior are much the same as those that serve to guide decision making in everyday life. As long as individual behavior is the result of subjectively weighing benefits and costs and acting accordingly, economists consider such behavior rational. Since the calculated benefits and costs of criminal activity vary among individuals, depending upon their attitudinal makeup and perceived income opportunities, different crime levels are to be expected from different types of people. For many individuals, crime is rational because it may be the best available economic opportunity.

ECONOMIC POLICY

The preceding theoretical approach to explaining criminal activity is not meant to imply that all criminals behave rationally in the economic sense of the word. It is true that some criminals are irrational or "sick" in that they do not consider the costs of their actions. But the economic approach appears applicable for any crime for which it can be presumed that the individual is not wholly irrational and is therefore responsive to changes in the costs and benefits of crime. It follows that in order to be effective, public policy must make crime less attractive by increasing its costs.

Increasing Legitimate Income Opportunities

A positive approach to deterring crime is to create more legitimate income opportunities, particularly for minority youth. There is sufficient evidence to

5. Readers familiar with the process of discounting future values to arrive at present worth recognize that the net benefits presented in Table 11-3 are undiscounted figures. Since *A*'s stock of human capital is lower than *B*'s, the discount rate applied to *A*'s loss of future income would be higher, making the crime even more profitable to *A* than to *B*.

indicate a direct relationship between unemployment and crime. As long as the unemployment rate for urban youths consistently remains high, the opportunity cost of crime will remain quite low. By making legal employment more attractive through an upgrading of economic opportunities, the cost of crime will increase and the quantity of crime should fall.

Law-enforcement officials repeatedly claim that in periods of prosperity, with the economy nearing full employment, crime rates decline. But full employment is difficult to achieve and impossible to sustain as long as the private-market sector is subject to business cycles. Even if full employment were achieved and many urban youths were on private payrolls, cyclical prosperity may only serve as a short-term palliative. With the downturn, those with low job skills or education would be the first to be released from employment and the last hired back when prosperity returns. Therefore, many people with minimal incomes may view opportunities for legal employment as only temporary and unlikely to produce a steady long-term income flow. Crime may seem a more rewarding activity to these individuals.

An expanding economy is an important factor in reducing crime, but a greater investment in human capital is also required. Increasing an individual's stock of human capital through education and vocational training is a form of investment because it increases the economic value of human services and results in a greater flow of future income. Government has long recognized the beneficial long-term effects of increasing economic opportunities. This recognition is apparent in the various federally financed job-training programs as well as educational loan-guarantee programs.

Unfortunately, training programs thus far have been expensive failures. Even so, continued experimentation, albeit on a smaller scale, with programs aiming to increase the value of human capital may yet prove successful. If and when that occurs, the cost of crime will increase for large numbers of the poor. But even with greater economic opportunities and income stability, there will always be wage earners at any point on the income scale who are at the threshold of viewing crime as a more rewarding alternative to legitimate employment, or perhaps as an attractive source of supplementary income. This is true for individuals earning very high incomes as well, for no matter how high the costs of crime, there will always be some individuals at the margin. However, the greater the costs of crime, the greater is the rationing effect and, consequently, the fewer the number of crimes.

Increasing the Cost of Punishment

Because of the dismal experiences with programs geared to increasing economic opportunities, many economists emphasize the role of punishment in deterring criminal behavior. Unlike the former approach, which is generally supported by sociologists, urbanologists, and criminologists, the punitive approach to crime reduction meets stiff opposition from members of these

groups. The root of the controversy lies in the economist's assumption of *rational criminal behavior.*

The Traditional View. The traditional view held by many sociologists and criminologists is that criminals are sick or abnormal individuals who are totally unresponsive to the costs of crime, or that they are socioeconomically deprived because of environmental factors. According to this view, the criminal mind is not rational, functioning irrespective of the expected costs and benefits of its actions. Individual behavior is assumed to be independent of past experiences, including those of others. According to this view, increased costs of punishment are not only ineffective but also reflect a cold and somewhat cruel attitude toward the sick and environmentally deprived. The function of criminal justice, according to this view, is to detain criminals until such time as they are rehabilitated and ready to resume their proper place in society.

The Economist's View. Many economists believe that criminal behavior rests on the assumption of rational behavior, as developed earlier in this chapter. Acceptance of criminal behavior as rational, logically leads to a policy recommendation of increased punishment as a deterrent to crime. But it must be emphasized that many crimes may not be prevented by increasing the costs of punishment. Included in this category are such crimes as drunkenness and narcotic addiction, which are really illnesses rather than crimes, as well as crimes of passion and crimes committed by the criminally insane. Many of these people are better treated by social programs that include education and physical and mental health care.

But for the majority, economists maintain that punishment deters crime. Rehabilitation of prisoners is not likely to be successful in changing behavior if the crime was a rational act in the first place. Behavioral modification rests on the assumption that the criminal was socially deviant and in need of reform. However, economists agree that prisoner rehabilitation is likely to be successful if it increases the chances of employment upon release from prison, for it will increase the individual's opportunity cost of committing future crimes. Unfortunately, however, relatively few rehabilitation programs are successful in that regard.

If one gives any merit to the saying "a person can be judged by the company he keeps," it is not likely that a person sent to prison for a serious crime will come out any better than when initially imprisoned. Consequently, many people convicted and imprisoned for criminal offenses return to the life of crime almost immediately upon release from confinement. To these people, crime still pays. Many repeaters were considered model prisoners and were paroled for good behavior. But good behavior within the confines of prison walls does not necessarily result in good behavior in a free society where economic choices concerning income must be made. Ex-convicts must face the same decisions concerning legal versus criminal income opportunities as

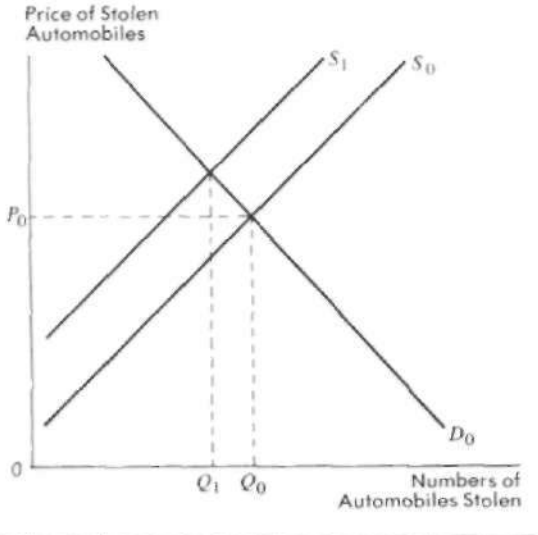
they did prior to imprisonment. In a good number of cases, the costs of criminal activity have changed little despite imprisonment. This is particularly true where judges are lenient in sentencing criminals and parole boards are lenient in releasing them.

Economists hold that crime can be reduced by increasing the probabilities of arrest, conviction, and imprisonment as well as increasing the length of time served in prison. Increasing the probabilities of being apprehended and punished deters crime because, unlike the traditional view, the economist's view is that criminal behavior is affected by past experiences and the experiences of others. Stiffer punishments also serve to reduce crime, but care must be exercised in relating punishment to the severity of the crime. For example, if the crime of armed robbery carries with it the death penalty, then the armed robber faces no additional costs in committing crimes of murder, kidnapping, hijacking, or treason. To be effective, penalties must be gradationally implemented to ensure marginal deterrence. In practice, this has become increasingly difficult as the number and types of illegal activities increase.

Supply and Demand Analysis. Figure 11-4 shows the deterrent effect of punishment on criminal activity by the use of market supply and demand curves. Assume the crime is auto theft and that participants in the market include the buyers of stolen cars as well as the car thieves. Thus, those who

FIGURE 11-4

Supply and Demand for Stolen Automobiles



demand and those who supply stolen cars are assumed to be two different groups of people. Because thieves quickly sell most stolen cars, this view of the marketplace is realistic.

The price of stolen cars is measured on the vertical axis and the quantity of stolen cars is measured on the horizontal axis. The demand curve for stolen cars slopes downward and to the right as does the demand curve for any normal and legal commodity. Buyers of illegal goods are also willing to purchase a greater quantity at a lower price than at a higher price. As usual, demand at any given price is determined by such factors as tastes, incomes, price expectations, and the prices of related goods.

The supply curve, on the other hand, slopes upward and to the right, indicating that the quantity of automobiles that thieves are willing to steal and offer to demanders is directly related to the price received in the market. At any given price, the supply of illegal goods is a function of the costs of production (special tools, labor, etc.), available technology, distribution costs, and the costs of punishment.

Given the supply and demand functions (S_0 and D_0) in Figure 11-4, market equilibrium is reached at a price of P_0 and a quantity of Q_0. If society desires a lower level of market equilibrium, it can achieve this equilibrium by increasing the costs to suppliers. Society can increase supply costs by increasing the probability of being apprehended and punished for the crime. The effect of higher supply costs is to shift the market supply to the left (S_1), resulting in fewer automobiles stolen (Q_1). If, however, criminals are "irrational" and therefore insensitive to changes in the expected costs of punishment, the number of cars stolen would not diminish but would remain at Q_0 despite the greater likelihood of arrest and punishment.[6]

Policy Toward Victims

At the present time, 45 states have compensation programs for the victims of crime. Although such programs are new and their economic impact is uncertain at this time, they do reflect a policy change in the area of criminal justice. Compensatory programs recognize that crimes of violence involve victims and that for every victim there is a personal loss. Essentially, compensation programs involve some type of public insurance against the personal costs of victimization. Premiums are collected in the form of tax dollars, and claims are paid to those subjected to criminal attack.

Public pressure for compensatory programs is founded on the view that our present system has ignored the victims of crime. The criminal chooses to commit the criminal act and selects the person to be victimized. Even if

6. Supply curve S_0 is assumed to contain some expected costs of punishment. If the market were comprised of irrational criminals, the market equilibrium would lie to the right of Q_0 and would not change with higher punishment costs.

apprehended and sentenced, there are cases in which the criminal is left better off than the victim. From the time of arrest, the criminal receives medical attention, an attorney if the criminal cannot afford one, room and board, and, if sentenced, opportunities to increase educational and vocational skills—all at public expense. By contrast, the victim may have to pay medical bills, replace property losses, miss work, and absorb the cost of trial proceedings. In addition, the victim may be dissatisfied with the results of the trial and live in fear of retaliation.

Although Congress has not passed a national compensation program for the victims of crime, it continues studying the various state programs to determine its feasibility. The state of Pennsylvania, for one, has had a compensation program in effect since 1979. Since that time, the Crime Victim's Compensation Board has paid out more than $12 million to individuals victimized by crime.

Ohio initiated a compensation program in late 1976. Under Ohio law, innocent victims of crime are eligible for awards to compensate for lost earnings due to absence from work and any expenses incurred as a result of the crime for which the victim is not reimbursed. The victim may receive up to $50,000 as compensation. Financing for the program is collected by means of a surcharge on all criminal court costs throughout the state.

Despite increased concern for the victims of crime, states fall far short of reimbursing crime victims in full. In 1988, payments to victims averaged less than $1,900 and limitations in some states make it impossible for any but the poor to qualify.

Should a national program to compensate crime victims be implemented, it will more than likely be one in which the federal government shares the funding costs with the states. It is also likely that any federal program will include some type of "means test" whereby victims must show financial hardship. The prevailing opinion is that there is little justification for providing public insurance against crime to those who have the financial means to acquire private insurance. Thus, federal support will probably be limited to the poor, and it is the poor who face the highest probability of criminal injury.

LEGALIZATION OF GAMBLING

For much of the twentieth century, society viewed gambling as a pernicious vice that fostered crime and corruption. Except for casino gambling in Nevada and more recently in Atlantic City, legalized gambling was restricted to such activities as church-sponsored bingo games, horse racing, dog racing and jai alai events. Where gambling was legally permitted, however, the bettor's attendance was required at the event in order to avoid breaking the law. But with the rapid success of state controlled lottery games and legalized off-site

betting operations, many gambling activities that only a few years ago warranted a jail sentence are now condoned and even encouraged. Gambling in the United States is becoming legitimized.

Rationale

Several underlying factors account for society's sudden support of gambling as a legalized activity. First, although it is recognized that some members of the community may feel morally victimized by gambling activities, it is now thought that this does not constitute sufficient grounds for making them illegal. Such laws are the expression of value judgments based on personal beliefs as to what is right and wrong. Nor is the fact that participants may be engaging in self-destructive activity seen as a justification to protect them from the consequences of their own behavior. Rather than interfering with consumer sovereignty by prohibiting gambling, society views regulation and public information concerning possible costs to potential participants as a more suitable alternative.

A second factor behind legalized gambling concerns the role of organized crime in monopolizing markets for illegal goods and services. The greater the number of goods and services made illegal, the greater is the incentive for organized crime to assume the role of supplier. Outlawing supply does not make the demand for an illegal good or service disappear. It merely makes its acquisition more expensive and channels business away from the legitimate private sector to the criminal sector. In other words, some people are going to gamble anyway so why force them to patronize organized crime. Instead, gambling participants can place their bets with publicly sanctioned organizations, such as state governments, charitable and religious groups, and entertainment-leisure conglomerates. Although the activity is the same, it has now become legitimate.

Another supporting factor leading to legalized gambling is the view in some quarters that it will permit police, prosecutors, and courts to allocate greater resources to preventing and controlling other forms of crime. The extent to which this materializes depends on the amount of resources individual communities already devote to enforcing gambling laws.

Lastly, some forms of gambling, such as the state lottery, are seen as a painless way to raise tax revenues. Compared with income, property and sales taxes, revenues received by state and local governments from gambling activities are collected from voluntary participants. Thus, society has come to view receipts from gambling as a substitute for more widespread and onerous forms of taxation.

State Lotteries

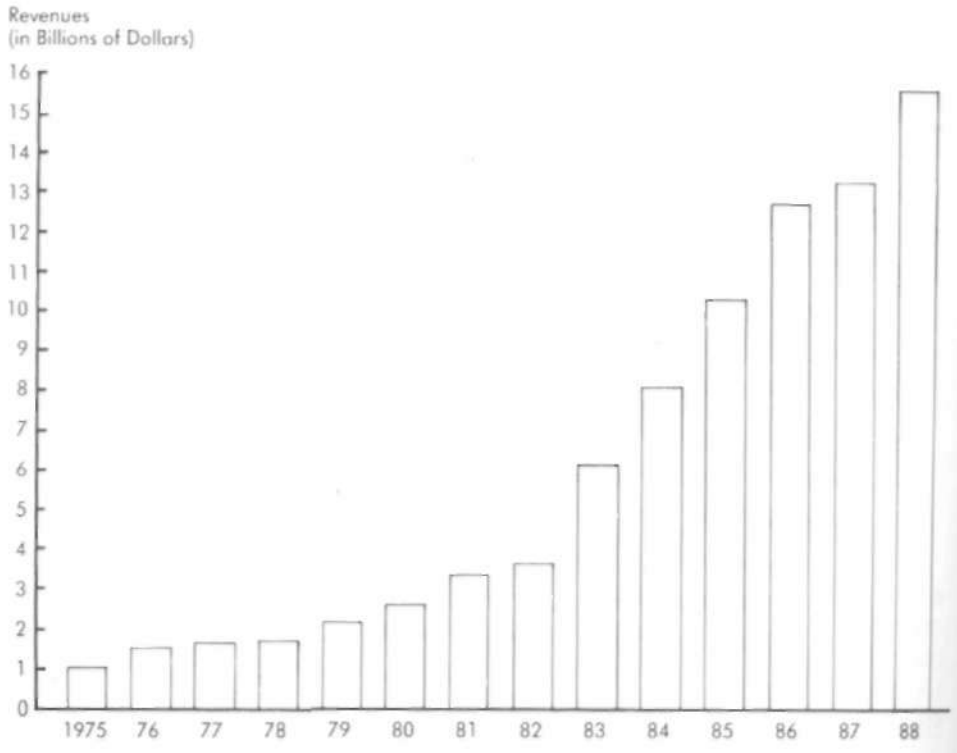
In a relatively short period of time, gambling has become part of the everyday routine of millions of Americans. Legal forms of gambling have proliferated

throughout many parts of the country. States now permit a wide variety of gambling activities. Among activities now legalized in some states are card clubs, mini casinos, video gambling machines, large scale bingo operations, and off-track betting. But nowhere has the impact of legalized gambling been more pronounced than with state-run lottery games.

During fiscal year 1988, twenty-eight states and the District of Columbia operated lotteries. Gross receipts in fiscal 1988 were nearly $16 billion, providing state governments with net earnings of almost $6 billion. In fact, lottery receipts were the fastest growing source of revenue for state governments during the 1980s. Figure 11-5 shows gross receipts from state lottery games from 1975 through 1988. With voters recently approving lotteries in Indiana, Kentucky, Minnesota, and Idaho, only 18 states are now without a

FIGURE 11-5

State-Lottery Gross Revenue, Fiscal Years 1975–1988



SOURCE: U.S. Census Bureau, *State Government Finance* (1989).

lottery. Today, state governments not only accept gambling but actually encouraged it.

Although the state lottery game is seen as a recent phenomenon, government-sanctioned lottery games existed in the U.S. as far back as the nineteenth century, when they were big business in such cities as New York and Philadelphia. Lotteries were eventually banned because of widespread scandal and abuse, and by 1894 they had been outlawed in all states. The modern lottery era began in New Hampshire in 1963 but met with limited success. Although the New Hampshire lottery was geared to horse racing, an event that usually interests the betting public, the game suffered because of the lengthy time period between purchasing a ticket and determining a winner. Gamblers were too impatient to wait weeks or even a month for a winner to be declared. As more and more states instituted lotteries, the games benefited from increasingly sophisticated computerization. With advanced technology, states could operate not only weekly and daily drawings but even instant games. However, the lottery game that is credited with propelling state lotteries into big business is the giant-jackpot lotto game.

States generally commit lottery proceeds to specific needs such as education, the elderly, the arts, and parks and recreational projects. In addition to the states, beneficiaries from the lottery include numerous business firms that provide lottery services, including telephone companies that provide dedicated phone service, advertising and public-relations firms, financial institutions that supply prize-money annuities and businesses that supply sophisticated and expensive computer equipment. Of course, numerous merchants who sell lottery tickets also benefit, including gas stations, card shops, supermarkets, and drug stores.

The odds of winning a state lottery game depend on the game played and the state in which it is played. For example, the odds of winning the lotto game in California is 14 million to one, while in Washington and Connecticut the odds are only 4 million to one. Obviously, of the almost 100 million people who participate annually, only a minuscule number win more than a token amount. As with all games of chance, most people lose.

The Future of Legalized Gambling

In 1988, Americans legally and illegally wagered more than $250 billion and the end is nowhere in sight. New gambling technologies continue to drive the industry's growth. Betting has become easier, quicker, more exciting and more tempting. In the foreseeable future, families will even be able to place bets on the outcome of sporting events in their own home with the use of remote control instruments.

As legalized gambling continues to grow—and it inevitably will—various groups have expressed a number of concerns. One concern centers on whether governments should be in the business of actively promoting gambling and using the proceeds as a substitute for tax revenues. Critics contend

that the government is tying its insatiable need for revenues with society's propensity to gamble. Others point to the fact that government-sponsored gambling constitutes a regressive form of taxation, with the poor spending a larger share of their income on games of chance than do the more affluent. There are others who hold to the view that gambling is morally wrong and should be made illegal once again. But overall, society appears to want more, rather than less, legalized gambling.

CONCLUSION

The information presented in this chapter should leave no doubt that the crime problem is a very serious one. Society cannot totally eliminate crime any more than it can eliminate pollution, but, crime can be reduced to a more tolerable level by redirecting public policy toward making it less economically attractive. Economists believe that the public must realize that the traditional approaches emphasizing environmental factors and irrational behavior as causes of crime and prisoner rehabilitation as the cure have been largely unsuccessful in achieving reduced crime levels. A more effective public policy would emphasize the rational behavior of many criminals and the deterrent effect of punishment on many crimes.

In many states it appears that such a change in public policy is taking place. In at least twelve states, discretionary sentences have been replaced by fixed-term mandatory sentences for various offenses, such as committing a crime with a gun, kidnapping, and arson. A majority of states have passed new death penalty provisions since 1972. During the years 1977–1982, the number of executions resulting from the death penalty totaled only six. In 1987, however, 25 people were executed. Prison sentences also appear to be getting longer, and there is a growing movement to apply stiffer penalties to juveniles committing serious crimes. Gun-control legislation continues to be a controversial issue in many state legislatures.

Whether taxpayers are willing to bear the increased costs of a criminal justice system that emphasizes deterrence remains to be seen. Nearly all observers agree that the public will have to commit substantial additional resources in order for prisons, courts, and prosecutors to reduce crime levels. Increased crime prevention and control is going to be costly, but less so than crime itself.

QUESTIONS FOR DISCUSSION

1. In your opinion, which kinds of crime are likely to be rational in the economic sense and which are likely to be irrational?
2. Should public policy be geared more to increased punishment as a means of deterring crime? If so, is the certainty of punishment or the severity of punishment more important?
3. What role should the death penalty play in the area of criminal justice?
4. White-collar crimes are usually committed by individuals with relatively high stocks of human capital. How can cost-benefit analysis explain such criminal behavior?
5. A public policy emphasizing the deterrent effects of punishment will require substantially more resources than are presently allocated to the criminal justice system. What costs and benefits would this entail for your own community?
6. Do you believe that prison rehabilitation programs can succeed? What changes would you propose in present rehabilitation programs?
7. Which type of gambling activities, of any, should be legal? Which should be illegal? Defend your answer in economic terms.

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12

NATURAL RESOURCES
COULD MARKETS HELP?

Economics is defined as the study of the allocation of scarce resources. Thus, economics is very relevant to the investigation of issues of scarce *natural* resources. Although one can learn much about natural resources by looking at their geology, ecology, or physics, economics is particularly suited to evaluating alternative natural-resource policies.

In the past decade people have become more and more concerned about natural resources. Not only does society worry that it is depleting resources, but different groups care both deeply and differently about how resources are used. As with any scarce good, conflicts arise over how natural resources should be used. For example, in the case of publicly owned land some people believe that wilderness areas should be extended, while others believe that public lands should be sold to private interests for mining or industrial use. Although conflict over use is common to all scarce goods, there are two respects in which the conflict over scarce natural resources is unique.

First, because many natural resources are nonrenewable, present users of natural resources compete not only with one another, but also with future users.

If humanity is going to survive into the future, it is clear that some system must exist to effectively allocate the use of scarce resources between the present and the future.

Second, many natural resources have only recently become scarce goods that generate conflicts among competing users. In the past, goods such as land, water, and fishing grounds were often so abundant relative to demands that they were essentially of no interest to economists. This is no longer true.

This chapter consists of three parts. The first part discusses the history of natural-resource scarcity. The second part asks directly whether free markets can adequately distribute natural resources among generations. Is the visible hand of government necessary to complement the invisible hand of the market? The third part investigates the cases of water resources and government land management as examples of how economics is relevant to specific natural-resource issues. Each of these issues is of particular interest to those who wish to conserve resources for future generations.

THE HISTORY OF THE USE OF NATURAL RESOURCES

With the current emphasis on energy and other resource crises, it might seem surprising that the past thousand years are replete with periods in which resources ran critically low. Table 12-1 lists several such periods.

The Resource Problem in England: 1200–1900

The expansion of English agriculture during the thirteenth century eliminated most accessible forests, depleting the major energy source of the period—wood. The wood shortage led to the use of coal (known at the time as "that awfule sea coale"—"awfule" because even then it created urban pollution; "sea coale" because the known deposits were found on pieces of land that extended into the North Sea). Similar circumstances in the Netherlands led the Dutch to reclaim land from the sea for the first time and led to unrealized plans in England to drain the Fens, the swamps northeast of London. Ironically, the Black Plague of the fourteenth century saved the English from this crisis by applying a positive check on population. The population declined by as much as 50 percent, agricultural lands were abandoned, and reforestation occurred.

It was not until the sixteenth and seventeen centuries that the problem of scarce wood arose again. Once more coal replaced wood as a fuel, and although coal continued to pollute, the development of the steam engine allowed miners to pump water out of coal mines inexpensively. As a result, coal proved far more abundant and far less expensive than it had been previously.

The Reverend Thomas Robert Malthus (1766–1834) was the first important commentator on finite natural resources. Although Malthus is best known for his pessimistic analysis of human population discussed in Chapter 15 of

TABLE 12-1

Resources Shortages

Date	Location	Resource	Probable Causes
ca. 500 B.C.	Babylon	Land	Excessive accumulation of salt in the irrigated land of the Tigris-Euphrates basin
1300 A.D.	England	Wood	Harvesting of forests
1200 to the present	Netherlands	Land	Population expansion
1600	England	Wood	Reharvestation of forests
1800s	U.S.	Forests	Population expansion, monopolistic interests
1960s	U.S.	General environmental deterioration	Technological expansion
1970s	World	Energy	Overuse of resources, forming of OPEC
1970s	World	Resources in general	No rational planning
1970s	Developing nations	Food	Population expansion
1980s	Western U.S.	Land and Water	Government ownership, growth of western agriculture

this book, the same analysis is also pessimistic about the possibility for rapid expansion of food production.

In the nineteenth century, English economists continued to be concerned about resources. Both David Ricardo and John Stuart Mill asserted the relevancy of the law of diminishing returns according to which the productivity of additional resources that were used would decline. However, mechanization at least postponed the inevitability of the law of diminishing returns, and the social problems of the industrial worker overshadowed resource problems. William Stanley Jevons forecast in *The Coal Question* (1865) that England had only twenty more years of coal resources at its then-current level of output.

Resources in America: The Conservation Movement

As the U.S. economy expanded geographically and economically through the nineteenth century, and as the frontier remained open, the notion of resource limits was of little concern. But by 1890 the last Indian treaties were signed symbolizing the closing of the frontier. The psychology of the generation changed from the belief that our nation was a boundless cornucopia to the belief that the United States was an unusually well-endowed but, nonetheless, finitely

endowed country. At the 1873 meeting of the American Academy for the Advancement of Science, the view was expressed that our resources needed to be rationally husbanded. By the first decade of the twentieth century, President Theodore Roosevelt's chief conservationist, Gifford Pinchot, forecast that the United States would, if current trends of usage continued, run out of timber by 1940, and out of coal by the end of the twentieth century.

During the post-Civil War era, big business expanded rapidly, so it should not be surprising that conservationists blamed free-market capitalism, and big business in particular, for the irresponsible exploitation of natural resources. It seemed clear to observers of the time, having just seen the virtual extinction of the buffalo and the rapid disappearance of forest land, that the unregulated quest for profits led to the overexploitation of resources in general. Timber resources in particular were overexploited, endangering the public interest both in the present and in the future.

The solution was clear. The government must assume the role of steward of this stock of resources. This should be done by government maintaining ownership of large tracts of natural resources or by government establishing control of the rate at which private enterprise could remove natural resources. The movement culminated in 1908 when President Theodore Roosevelt called a conference of governors who agreed with him on the goals of resource conservation. Not only did the governors agree that public ownership was desirable, but the meeting also led to an increase in the amount of public land set aside in national parks, national monuments, and national forests.

Resource Problems after World War II

Resource concern returned to the public eye on three different fronts following World War II. First, President Truman appointed a Presidential Commission to study materials and resource requirements for the deepening conflict with the USSR during the 1950s. This commission reported that resources were a problem in that their costs were likely to rise over the following decades, but that extinction of resources was not likely to be a serious consideration. Second, Rachel Carson's book *Silent Spring* received widespread attention. Carson argued that our use of insecticides was doing irreparable harm to the natural environment. Third, books appeared expressing deep concern that the current excessive population growth would lead to a global catastrophe.[1] At the same time technologists predicted a new abundance based on new technol-

1. William Vogt, *Road to Survival* (New York, NY: William Sloan Associates, 1948); Fairfield Osborn, *Our Plundered Planet* (Boston, MA: Little, Brown, 1948).

ogy.[2] Others, expressing mixed optimism, argued that fossil fuels were indeed very finite, but that some form of energy, typically nuclear power, would ultimately replace them.[3]

At the beginning of the 1970s, in spite of some technologists who proclaimed the beginning of a new age of plenty, many people became increasingly convinced that the limits of our natural resources had been reached. The clearest warnings came in energy resources, where the output of natural gas and oil in the United States began to decline, after peaking in 1970, as shown in Table 12-2.

As smog alerts became routine in cities, people began to recognize that the air itself was scarce. Famine occurred successively in Biafra, Bangladesh, and then the Sahel of sub-Saharan West Africa. Evidence grew that water, particularly in the American West, was being overused and the water table was being drawn down. Congestion developed in the wilderness. But what was particularly distressing was that all these things happened at once.

Economist Kenneth Boulding coined the term "Spaceship Earth," suggesting that the entire planet is a finite interdependent system. The Club of Rome sponsored work that resulted in the 1972 publication *The Limits to Growth*. This book used a computer model to demonstrate that mankind was simultaneously outstripping resource limits in fossil fuels, land, water, air, and nonmineral resources. As seen in Figure 12-1, the study projected a catastrophic collapse of the world's food and industrial production sometime in the twenty-first century. As if it were foreshadowing the prophecy, the price of oil rose 400 percent from 1972 to 1974. As a result, most of the world was left with a lower living standard in 1974 than existed in 1972. Although prices fell sharply in the 1980s, and international economic growth resumed, the outlook for the 1990s is uncertain.

ECONOMIC ANALYSIS OF FINITE RESOURCES—WILL THE FREE MARKET CONSERVE FINITE NATURAL RESOURCES?

Beginning with the early conservationists and continuing through today, most natural-resource experts who are not economists have generally believed that unregulated free markets will lead to overuse of scarce natural resources. Many argue that leaving natural resources to the free market would be like leaving

2. John Von Neuman, "Can We Survive Technology?" *The Fabulous Future* (New York, NY: Dutton and Company, 1955).
3. Palmer Putnam, *Energy in the Future* (New York, NY: Van Nostrand, 1953); Hans Thirring, *Energy for Man* (New York, NY: Harper and Row, 1976).

TABLE 12-2

U.S. Oil and Natural Gas Production and Reserves

Year	Oil Production (In billions of barrels)	Oil Reserves (In billions of barrels)	Gas Production (In thousand cubic feet)	Gas Reserves (In thousand cubic feet)
1950	1.974	26	6.28	185
1960	2.575	32	12.77	262
1970	3.517	38[a]	21.92	290
1971	3.453	37	22.49	280
1972	3.455	36	22.53	265
1973	3.361	35	21.73	250
1974	3.202	34	21.60	237
1975	3.057	33	19.24	228
1976	2.976	31	19.10	215
1977	3.009	32	19.16	208
1978	3.178	31	19.12	208
1979	3.121	30	19.66	201
1980	3.146	30	19.40	199
1981	3.129	29	19.18	202
1982	3.157	28	17.76	204
1983	3.171	28	16.03	197
1984	3.250	28	17.39	197
1985	3.275	28	16.38	193
1986	3.168	27	15.99	192
1987	3.047	NA	16.35	NA

[a] The Alaskan North Slope oil discovery occurred this year.

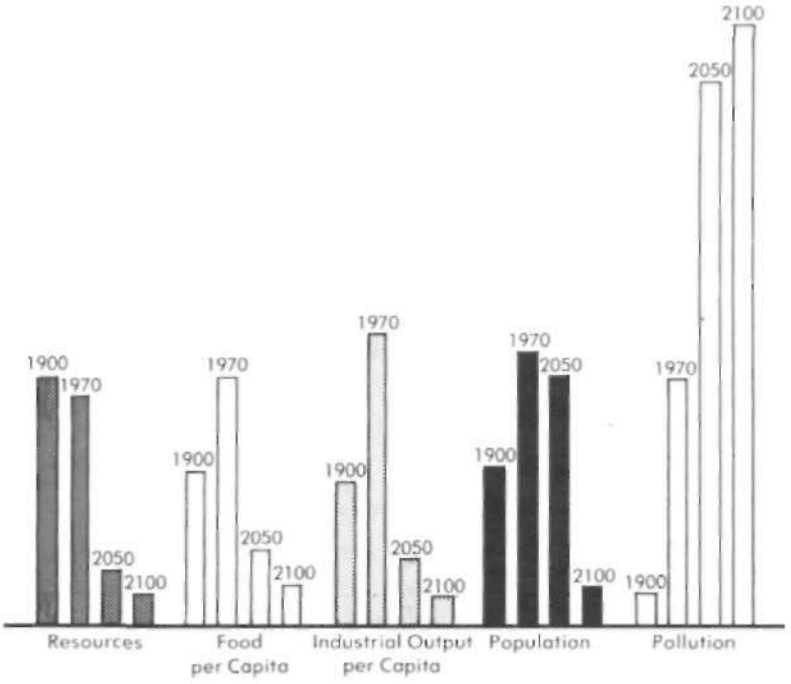
SOURCE: *Statistical Abstract of the United States* (1989) and Sam Schurr *et al., Energy in America's Future* (Baltimore, MD: Johns Hopkins University Press, 1979).

the management of the chicken coop to the discretion of a fox! Most economists have greater faith that the free market will be able to sensibly allocate natural resources over time. The economic theory of exhaustible resources suggests that free markets will induce the incentive to conserve. The following suggests how it works.

Suppose one owns an oil reservoir of, say, 100,000 barrels. Should the oil all be sold today or should some of it be conserved? Assuming sufficient demand exists to sell all of the oil, the only reason not to sell it all today is that the owner foregoes the revenue he would earn next year if he sold it then instead. In the language of economics, the foregone revenue is the *opportunity cost* of selling oil today. Suppose that the profit on oil after subtracting the costs of extraction is $30 this year, and suppose the owner expects the price of oil to be the same next year. Now, what should the owner, as a profit-maximizing producer, do? The only responsible thing that the producer could do is to sell all of his oil today. Waiting until next year to sell the same oil for $30 in profit is just like putting the money in the bank for a year and earning no

FIGURE 12-1

Club of Rome Analysis of Relative Quantities of Crucial Socioeconomic Variables for the World



SOURCE: Meadows et al., *The Limits to Growth* (New York, NY: Universe Books, 1972).

interest on it! He would certainly want to be able to do better than this since alternative uses for the money exist that could earn him a positive return on his wealth. On the other hand, if the owner expected the profit to be $60 next year, he would be foolish to sell any oil this year because by waiting just one year, he could double the value of his oil wealth. That would be like putting money in a bank in which he received 100-percent interest!

Economic theory reasons that the profit (or what is known technically as the economic rent) on the oil or any other natural resource will neither double nor remain constant. Instead, it will rise by the rate of return on alternative investments. Competition will force this to occur. This results because the increase in the economic rent (or profit) of a natural resource is the only return the owner receives on the resource. Unlike a savings account, natural resources

do not earn interest. If the rent is currently not increasing at a level equivalent to the interest rate on alternatives, people will sell all of their resources now rather than wait until next year. The result is that the supply next year will fall, causing the rent next year to rise until the rent increase between this year and next year is the same as the return on competing alternatives. On the other hand, if the return on natural resources is greater than the return on alternatives, people will try to buy natural resources immediately, causing a rise in the price of the natural resources this year, giving a lower increase in rent between this year and next. But whatever the starting point, the theory of natural resources concludes that competition will make the rent of natural resources rise by an amount equal to the rate of return on alternatives.

The fact that in a free market the rent on natural resources tends to rise by the rate of return on alternatives naturally induces conservation. As the rent on natural resources increases, natural-resource prices increase, so the quantity demanded decreases. The fall in quantity demanded necessarily means resource owners increase their conservation. Not only does the price increase encourage users to conserve the resource by reducing the quantity demanded, but it also encourages resource users to substitute other more abundant, less expensive alternatives. Resource suppliers are encouraged to look for more costly deposits of the resource to extract.

Natural scientists have indicated that there exist abundant substitutes for all current mineral resources with the possible exception of phosphorous.[4] Clearly the market leads to some conservation, but does it lead to the correct amount of conservation? To economists the term *correct amount* has a very specific meaning. The correct amount means that amount which puts resources to their highest valued use. Conservation is thought of as the use of not being used at all. This notion of correct use is what economists call *economic* or *allocative efficiency*. Economists provide two reasons why the amount of conservation may be too little.

Common Property Resources

Assume there exists a reservoir of oil under the ground to which anyone has the right and ability to drop a well and pump out oil. In this case, drillers have no reason to conserve, because competitors can always enter and extract any oil that the driller conserved. The cost of pumping out oil today is only the extraction cost. There is essentially no opportunity cost because if one doesn't pump out the oil today, rivals will. The result is inadequate conservation.

Economists observe this problem not only among the owners of oil wells, but also among fishermen who overfish fishing grounds, users of groundwater

4. H.E. Goeller and A.M. Weinberg, "The Age of Substitutability," *Science* (February 20, 1976) pp. 683-689.

in the High Plains, ranchers who overuse common rangeland, and campers who previously overused Yosemite National Park. The same problem leads to pollution of our air and to congestion of our urban highways. The problem is known as the problem of common property resources. The cause is simply that decision makers have, for whatever reason, no incentive to include the complete costs in their private calculations of what is profitable. This problem typically arises when there is no clear owner of the resource.

Future Consciousness

The second possible reason that conservation will be inadequate is that decision makers will be insufficiently conscious of the future. People may have an innately adequate facility for looking out for future concerns, or decision-making institutions may be organized in such a way that the emphasis is, irrationally, on achieving short-term rather than long-term goals. The second argument has been made both for political decision makers who prefer results during their term in office and for corporations in which the decision maker's emphasis may be overly centered on present profit at the cost of future welfare.

The validity of these arguments has been debated often, and there is surely something to them. Yet, other economists argue that with rapid technological progress, the bias of our present versus future allocation is, perhaps surprisingly, toward the future rather than the present. They suggest that with the incredible progress of the past one-hundred years, it might have been better to use more resources in the nineteenth century to bring the living standard at that time closer to our present living standard.

Policy Responses

At the urging of conservationists as early as the start of the century, policymakers have responded to resource problems with government action. Many of these government actions are controversial. There are innumerable ways in which the government is involved with natural resources. Two of the most important are in the areas of water- and land-resources policy.

THE WATER-RESOURCE PROBLEM

As with most natural-resource issues, the water-resource problem is simultaneously one of natural science, law, politics, and economics. As the United States moved from being a very sparsely populated, primarily rural nation at the beginning of the nineteenth century to a fairly densely populated, primarily urban population today, water no longer is considered a free good of unlimited supply, but rather an economic good. Today, in order to obtain water, other things of value must be sacrificed.

Although the United States has water resources sufficient to provide for our total water needs, the nation suffers two very serious regional water problems. First, there are regions with an insufficient quantity of water. This problem characterizes most of the western United States as well as certain major eastern metropolitan areas, particularly New York City. Second, there are regions where there is a problem of inadequate water quality due to pollution. This is the problem in most of the eastern United States.

Water Use

It is hard to define what is meant by water use because water is recyclable. In particular one must distinguish between *water withdrawals* and *water consumption.* Withdrawals are any diversion of water from nature irrespective of what happens to it afterwards. Consumption is any use of water after which the water is not returned directly to groundwater or to surface water. Water that is consumed cannot be used again until it runs back through the hydrologic cycle. So, if an electric generating plant uses stream water for cooling after which the water is returned to the stream, that counts as a withdrawal, but not as consumption. Water used to irrigate land after which the water transpires or evaporates into the atmosphere is both a withdrawal and a consumption use.

More water in the United States is consumed for agricultural irrigation than for any other use. Table 12-3 shows total water consumption by use in the United States.

Specific Water-Use Problems and Policies

Typically, the responses to inadequate water quantity have been either to utilize groundwater resources or to engineer a technologically sophisticated water transit system to move water from one area to another.

TABLE 12-3

U.S. Consumption of Water
(In billions of gallons per day)

Year	Total Consumption	Irrigation	Public Water Supply	Rural Domestic	Industrial Use
1960	61	52	3.5	2.8	3.2
1970	88	73	5.9	3.4	4.9
1975	96	80	6.7	3.4	6.1
1980	100	83	7.1	4.0	8.3
1985	92	74	NA	9.2[a]	6.1

[a]Includes domestic, public supply, and commercial use.

SOURCE: *Statistical Abstract of the United States* (1989).

New York City. Ever since the nineteenth century, the New York City region has consumed far more water than is available within the city. As long ago as 1842, water was impounded in the Croton reservoir north of the city and then transferred to New York. Over the next century, the city expanded the Croton system and transferred water first from Catskill mountain streams, then from the Delaware River Basin. The latter transfer introduced complex legal issues because the Delaware River Basin provides water not only for New York State but also for New Jersey and Pennsylvania.

The High Plains. The High Plains, the region of the United States that lies east of the Rocky Mountains and west of the one-hundredth meridian running through Texas, Oklahoma, Kansas, Nebraska, and the Dakotas receives less than 20 inches of rain per year. For most agriculture to be viable, supplementary water is necessary. In the west Texas plains, farmers have developed a very successful cotton-growing industry with the aid of irrigation water provided by "mining" the Ogallala aquifer underneath the land. The aquifer is an enormous deposit of subterranean water. Withdrawals from this formation have greatly exceeded the local recharging of the aquifer through water runoff and rainfall.

California. The San Joaquin and Imperial valleys of central and southeastern California have climates and soil capable of great agricultural productivity. Unfortunately, the rainfall, particularly in the Imperial Valley and in the southern portion of the San Joaquin Valley, provides too little water for successful agriculture. Added to this is the dramatic growth of the southern California urban area, which stretches down the cost from Santa Barbara to San Diego and inland to San Bernardino and Riverside. From 1940 to 1980, this area expanded in population from about 3 million to 13 million people. As with the California valleys, rainfall is inadequate to provide for water needs.

Just before World War I, the city of Los Angeles addressed the problem of water scarcity by transferring water via an aqueduct from the Owens Valley on the east side of the Sierra Nevada mountains to Los Angeles. As urban growth outstripped these water resources, however, it became necessary to transfer additional water. This was accomplished during the 1930s by moving water from the Lower Colorado River to the Los Angeles Basin. In the 1930s the Central Valley Project constructed dams and canals to transfer water from the Sacramento River Basin and to store the melting snow pack on the western side of the Sierra Nevada for timely use in the San Joaquin Valley and the San Francisco metropolitan area. Additional water was diverted from the Lower Colorado during the 1940s, this time through the American Canal, to the Imperial Valley. Finally, work was begun in the 1960s on the largest water-diversion project to date, the California State Water Project, which transports water from the Feather River, a tributary of the Sacramento River, both to the Southern San Joaquin Valley and across the Tehachapi mountains to the Los Angeles Basin.

Other Transfer Plans. There are many other water-transfer proposals. These range in ambition from small-scale plans, such as one to redistribute water in Wyoming, to moderate-sized projects such as the Central Arizona Project, which will withdraw additional water from the Colorado River.

In 1964, the Ralph W. Parsons Company proposed and designed a plan on an unheard-of scale to transport up to 300 billion gallons of water per day from Alaska and northwestern Canada to seven Canadian provinces, thirty-three U.S. states, and three Mexican states. Roughly 100 times as large as the California State Water Project, the project was never carried out.

Conflicts over Water Resources

At the heart of each of these water problems is the basic economic problem of scarcity. Water has become a scarce resource in precisely the sense that economists use the term. To get additional water, someone must give up something that has value. The particular resource that must be given up varies depending on circumstance but, invariably, giving up the something means that someone will bear a cost, and that someone is not necessarily the same person who gains the water. This fact gives the water problem a political as well as an economic dimension.

The transfer of water from one basin to another also means that the water is transferred from one group of users to another. The transfer of water is more difficult when the transfer is across state lines, as in the case of the Delaware River Basin. Still more difficult are the problems of transferring water out of the Colorado River, because the Colorado flows from the U.S., along the California-Arizona border, into Mexico. Therefore, the water that is used by Americans comes at the expense of Mexicans. The problem is further complicated because the Navajo Indian Nation also has claims on the water of the Colorado River. These conflicting claims have led to deep discord.

The construction of physical transfer systems is typically very expensive. Not only do northern Californians resent that southern Californians are taking their surplus water, but they are further upset at the prospect that they must share in paying for it either through higher taxes or lower alternative public services.

Dams are constructed to create electric power and to control and distribute the flow of water downstream. Dams allow for increased water transfers by providing easier and more dependable access to water supplies by users residing a great distance away from the natural river basin.

There are also environmental costs. For example, to even out the flow of the Lower Colorado, there was a plan in the 1960s to dam the lower reaches of the Grand Canyon. Glen Canyon, just upstream from the Grand Canyon, was dammed up in the late 1950s, turning a unique environment into Lake Powell. By lowering water levels in streams, by damming rivers to create reservoirs, and by adding to water levels in locations that receive the water,

water-transfer projects change the ecological balance in ways that many fear are typically for the worse.

By building up the amount of salt in the soil, irrigation can have deleterious long-term effects on the very land it was meant to help. This increase in salinity happens because even fresh water has a slight salt content, and as the water evaporates the sediment of salt remains. This problem has become serious in the Imperial Valley. The current solution has been to build outflow canals to flush the salt back into the Colorado River, but as a result, the Lower Colorado's saline content has increased 30 percent in the last 20 years, jeopardizing the Mexican cotton industry, which uses the reinjected water for agriculture. This competition for fresh water creates political conflicts between the United States and Mexico.

Present misuse of a scarce natural resource such as water creates a cost that is passed on to future generations. "Mining" groundwater reduces the supply of easily available water in those regions where it occurs. As a result future residents of those regions must either do without water or use less accessible water resources. This is a particular problem in west Texas and in California.

Economic Analysis of Water-Use Policies

Economic analysis cannot tell what should be done; it can only determine, at best, what the effects of alternative actions will be. Most economists do believe that, all other things being equal, allocative efficiency is desirable. Much economic analysis tries to establish whether a policy allocates resources efficiently.

Economic Analysis of Groundwater Use. Economists accept that using groundwater may be a good way of obtaining water on the High Plains. It can be extracted at comparatively low cost and is generally free of pollutants. It conceivably might even be sensible to use more groundwater than is recharged into the aquifer. However, economists do question whether the quantity of groundwater used is the allocatively efficient amount. Behind this question is the common property resource problem discussed earlier. If there is no clear owner of a resource, there is inadequate incentive to conserve because the full costs of use are not borne by the user.

The basic debate concerns what policy response is appropriate. Many conservationists favor government ownership of groundwater. The government would then be the authentic owner of the resource and to that extent it would have the motive to consider all the costs and benefits in the use of the water. The federal government rather than state governments would have to manage the aquifers because aquifer boundaries are not coincident with state lines. While the government could institute a strategy that would efficiently manage the aquifers, economists do note two potential problems. First, the government, being influenced by political interests, might allocate the water

on a political basis. As a result, the water might not end up going to the users of highest value. Second, even if the government tries to allocate the resources efficiently, it may find it very difficult to figure out which uses are of highest value. It is, after all, extraordinarily difficult for a centralized decision maker to know the details of use and cost of a resource that has many different uses and sources.

An alternative way to manage groundwater resources would be for the government to devise rational methods that employ markets to allocate its use. These methods are likely to be more efficient than centralized management. Two options exist. First, the government could decide each year how much water was to be pumped out and then allow potential users to bid competitively for the right to use that water. Of course, there would be no guarantee that the quantity of water used would be the efficient quantity, but this method at least would ensure that whatever quantity is used will be used by the highest bidders. If implemented, such a plan would lead to considerable reallocation of water from agricultural uses to industrial and municipal uses. Reallocation would occur because agricultural users generally attach lower value to additional supplies of water than do industrial and municipal users.

A second way to manage groundwater would be for the government to establish clear private ownership of the resource but impose a fee or tax for using it. The fee or tax would encourage the private owners to internalize the opportunity cost of using the water today versus in the future. In this way, the owners would consider the full costs and benefits of water use. In principle, this solution works very much like the previously mentioned water-rights alternative based on competitive-bidding. The most important difference is that the government sets the *price* of, rather than the *amount* of, water it wants used. It is not clear which approach would be more efficient.

Economic Analysis of Interbasin Transfer Schemes. To evaluate large capital-expenditure plans by the government, economists have developed a technique known as cost-benefit analysis. This method compares the economic benefits, which in water projects are multiple, to the economic costs, which are also multiple. For example, in the California State Water Project, the benefits include the value of the added water in southern California, the value of the recreational lakes created in northern California, the value of the additional electrical energy, and the value of the improved flood control. The costs include the value of the foregone water in northern California, the value of the foregone resources used to construct and operate the project, and the value of the wild rivers destroyed in the North.

The cost-benefit comparison is often expressed as a question. But rather than asking whether the benefits are greater than the costs, economists ask: (1) What price would the transferred water have to be sold at to provide benefits that cover the costs? and (2) Is this price roughly comparable to the value of the water to the users?

In the case of the California State Water Project it turns out that the charge for water that would be necessary to pay for the project is considerably greater than the value of the added water to users. It has been estimated that for Los Angeles in 1960 the cost of a unit of water from the project was, depending on assumptions, between three and eight times the then-current price of water.[5] In other words, the California State Water Project is an inefficient way to allocate water resources. It is an example of taking resources of high value and putting them to low value uses.

What is of particular interest to economists is that there is an alternative way of "solving" the water problem that is less expensive. It involves making the markets for water work better.

An Alternative Solution to the Water Problem. The first part of the solution is to charge users a price based on the value of additional or marginal water supplies. Invariably water is priced well below its marginal value. If water were priced at its marginal value, which in the case of Los Angeles would mean at about twice its present price, a new "source" of water would appear. This new source would be water conservation. Again, according to the law of demand, price increases will encourage people to reduce the quantity of water demanded. Evidence suggests that for every 10-percent rise in water price, the demand among agricultural users will fall by about 6.5 percent.

The second part of the solution is to price all uses of water at the same rate relative to the cost of providing the water to different users. Currently, the price charged for agricultural use of water is considerably lower compared to the cost of providing it than are the prices charged for home and industrial uses compared to their costs. This inequity means that there is water being used for agriculture that could be used for higher-value industrial and urban uses. Because agricultural use of water is such a large percentage of total water use, a fairly small percentage reduction in agricultural use would lead to an enormous increase in the supply available for nonagricultural use.

The third part of the solution is to price water differently depending on the available supply. Just as it makes sense to charge higher subway tolls at hours of peak use, it is also efficient to charge more for water at times of peak use during the year. When the quantity available is less than the quantity demanded (as it often is in periods of peak use), the quantity of water available can be increased by charging higher prices.

The fourth part of the solution is to clarify rights of ownership. The ownership of water is an enormously complex issue. Water resources would end up being better allocated if it were possible to sell water rights on a free market. Often the water right goes with the property, so in order to buy the water right you must buy the entire property. It would be helpful if the water

5. Jack Hirschleifer, James De Haven, and Jerome Milliman, *Water Supply* (Chicago, IL: University of Chicago Press, 1969) p. 969.

could be sold independently of the rest of the property. In the western United States, traditional law has it that water becomes the property of the first user. Difficulties arising from the ownership of water rights can prevent the efficient allocation of water resources.

While these policy proposals would probably lead to a more efficient allocation of water resources, they would not necessarily lead to a better use of water resources. Pricing water at its marginal cost would redistribute wealth. For example, if free-market pricing had been used to allocate water in California, its price would be considerably higher in southern California than in northern California. Agriculture in the region would be less profitable because water necessary for irrigation would be considerably more expensive. Those in the North would have more water at a lower cost. Conflicts like this are serious and involve more than the economic concept of allocative efficiency. Nevertheless, one would hope that those who do resolve such issues in the future will take economic analysis into account.

THE FEDERAL LANDS

The federal government owns approximately one-third of the land area of the United States. The pattern of federal land ownership is geographically uneven. For example, the federal government owns over 80 percent of the land in Alaska and Nevada but less than 1 percent in Connecticut, Iowa, and Maine. The Bureau of Land Management of the Department of the Interior and the U.S. Forest Service of the Department of Agriculture are the two largest federal agencies managing federally-owned land. Most of the rest of federal lands belong to the National Parks Service, the Fish and Wildlife Service, the Department of Defense and the Department of Energy.

Many different groups use or desire to use these lands. Table 12-4 shows some of the important resources of federal lands. Ranchers use them for grazing animals; mineral companies use them for mining; individuals seeking recreation use them for hunting, fishing, camping, hiking, and other activities; timber companies use them for forest supplies; and environmental preservationists use them in the sense that they lobby the government to pass laws that restrict the use of land. Conflicting claims by at least some of these parties abound.

There are two particular areas where economics can significantly contribute to public thinking about these public lands. First, economics can help decide how one should use these lands. For example, on what basis should certain lands be used for oil exploration? On what basis should certain lands be committed to wilderness? Second, economics can help decide among various ownership options. Two alternatives to federal government ownership have been suggested. The first alternative, which arose out of discontent among western ranchers at federal-land-management policies, advocated that owner-

TABLE 12-4

Resources Found on Federal Lands

Resources	Amount on Federal Lands
Undiscovered oil and gas	50% of total
Coal reserves	33% of total
Uranium	35% of total
Softwood timber inventory	54% of total
Recreational use	7.0 billion visitor hours in 1987
Rangeland	28% of total

SOURCE: *Statistical Abstract of the United States* (1989) and *The Annual Report of the Council on Environmental Quality* (1982).

ship be transferred from the federal to state governments. The political expression of this viewpoint was known as the "Sagebrush Revolution". The second alternative to federal ownership rejects government ownership at any level and advocates selling off the land to private individuals or organizations. This alternative is known as "privatization." Former Secretary of the Interior James Watt and President Ronald Reagan advocated both of these alternatives.

Economic Analysis of Land Use

Economists begin thinking about land use by suggesting that it is efficient to allocate land to its highest valued use. The difficulty with applying this criterion to actual land-use decisions is that it is very hard and controversial to determine the relative value of competing uses. It is tempting to think that the value of a land use is simply related to the dollar profit that can be made from it. While dollar value is certainly relevant, it is too narrow to be used as a general framework. As a practical matter, what economics can do is organize one's thinking by carefully considering both the benefits and the costs of various land-use alternatives. The following discussions of particular land-use issues show how economics can be applied to such problems.

Northeastern Wyoming. In certain cases conflicts over competing land uses are between parties who all seek monetary returns. An example of this type of conflict is the debate over whether to use federal lands in northeastern Wyoming for grazing livestock or for strip-mining coal. Economists would counsel the decision-maker to compare the values of these two alternatives by adding up the benefits minus the costs of grazing and comparing the result to the benefits minus the costs of strip-mining. The decision-maker would need to pay special attention to the cost of scarce water used by strip-mining and to the number of years that strip-mining would preclude grazing, but these costs can be measured fairly accurately by using market prices. In addition, if the

strip mine is large, new communities might need to be created for imported workers, and the ranchers of the area would be diminished in number. Together, these demographic changes would produce cultural changes in the area. While these effects are not easily measured in dollars, many, though not all, observers agree that they are comparatively small, albeit intensely felt by those affected.

Rainey Wildlife Sanctuary. There are some cases where two uses do not conflict with one another. For instance, the Rainey Wildlife Sanctuary in Louisiana is owned by the Audubon Society, but the society has leased oil- and gas-exploration rights in the sanctuary to Mobil Oil at a price which sufficiently compensates the Audubon Society for whatever detrimental effects on the wildlife refuge there might be as a result of exploration.

Grand Canyon. In some cases the conflict involves a unique amenity such as the Grand Canyon. Such a case developed several years ago, when it was proposed that a dam be built to form a reservoir along part of the Colorado River as it runs through the Grand Canyon. In this case it is impossible to assign the full dollar value to the amenity. We would measure the dollar amount that visitors to the Grand Canyon actually pay to visit it. However, this underestimates the value that visitors place on the Grand Canyon, because the amount they actually pay is typically less than the amount they would be willing to pay to visit the Canyon. But the important reason that this does not fully measure the value of the Grand Canyon is that there are other people who gain from its unspoiled existence. These parties include both future generations who will value the Canyon and people who, although they never visit the Grand Canyon, nonetheless derive substantial pride or peace of mind from its unspoiled existence.

Use of National Parks. Given that one has areas like national parks the additional question arises, how should one decide who should get to use them? In both Yosemite Valley and the bottom of the Grand Canyon, congestion would be extreme were there no mechanism to control use. Many economists prefer the setting of a monetary toll for scarce resources like national parks, because that way only users who value the use of the resource above that toll would use it. However, others argue that a toll discriminates in favor of the wealthy and against the poor, both of whom should have equal access to our natural amenities. As a result other methods are used to reduce demand. These include such techniques as restricting automobile traffic into Yosemite, requiring inconvenient procedures for making campsite reservations, or simply requiring people to suffer through frustrating traffic jams, as in the Great Smoky Mountains.

Wilderness Areas. Some land areas have been declared national wilderness areas. Wilderness designation means that no structures may be constructed; individuals may be required to obtain entrance permits; motor vehicles may

be restricted; and natural changes, be they through forest fire, flood, or disease, will not be hindered. It is nearly impossible to quantify the costs and benefits of setting aside such areas in comparison to using them for other uses. It is instructive, however, to inspect the arguments in favor of creating such areas. Generally, the benefits result from ecological diversification in much the same way that an investor gains benefits by diversifying his or her portfolio.

Two specific arguments are made in favor of creating wilderness areas. First, benefits derive from maintaining a diversity of species controlled by natural selection rather than by artificial selection. Specifically, this diversity may provide species that furnish unique vaccines for man at some unknown time in the future. Second, benefits derive from maintaining genetic diversity within a species as protection against catastrophic blights or plagues that might afflict some genetic varieties (subspecies) more than others. As a result, rapid recovery by the species from such unforeseeable events is enhanced. These arguments are cogent, but economists would propose the use of economic analysis before decisions are made to create wilderness areas.

The economist suggests looking at benefits of alternative allocations of those same resources. How much wilderness area is desirable? In other words, what are the marginal benefits and marginal costs of added wilderness land? Is there some optimal amount of wilderness? Are there other possible ways to achieve the desired objectives at lesser opportunity cost?

The Issue of Land Ownership

The federal government has owned a great percentage of the land in the western states ever since they were acquired in the nineteenth century. As a condition of statehood, many of the territorial governments renounced all claims to federally owned lands. As population and development have proceeded over the past 100 years, however, states have increasingly contested the issue of federal ownership.

The Sagebrush Revolution. In 1979 the Nevada State Legislature passed a bill declaring the state's right to 49 million acres of land within Nevada that is owned by the U.S. Bureau of Land Management. This acreage constitutes more than 70 percent of the land area of Nevada. The Sagebrush Revolution was born with this symbolic legislation.

The explicit purpose of the Sagebrush Revolution was to transfer the ownership of federal lands to the state governments. Some change in land use toward greater commercial and industrial development would no doubt result from such a change in ownership. The western states are generally among the most rapidly growing states, and their state legislatures generally favor more development than the federal government allows. Still, land-use decisions would continue to be made by political bodies—state governments rather than

the federal government—that would also be subject to the pull of political interests rather than market interests.

Land management practices under state ownership would likely resemble the federal model because, just like the federal government, state governments would have the very difficult problem of centrally managing massive properties, each with its own idiosyncrasies. Many economists fear that the states would be unable to manage these properties with any greater expertise than the federal government.

Privatization. Economists who favor selling most federal lands to private parties (a process called *privatization*) have advanced several arguments for doing so. First, the sale of the lands could pay off a considerable share of the national debt. Second, the sale of the lands would allocate their uses in patterns that are more economically efficient. Third, sale would decentralize the control of the lands, placing authority for land management in the hands of those who know the lands to be managed most intimately.

According to one estimate, the sale of half of the 700 hundred million acres of federally owned land would raise as much as $500 billion.[6] With this amount, it would be possible to buy back almost 50 percent of the current national debt. While this would make many people feel more comfortable, economists point out that such a policy would have dramatic effects on the private bond market because the demand for loanable funds would decrease significantly. Selling off the lands might well lower interest rates, which would have positive effects on private investment but possibly negative effects on private consumption because, as resources move into producing interest-sensitive capital goods, resources must move out of the production of consumer goods. The net effects on the economy might be very great, and they would be very hard to forecast. Economists also point out that the impact of this debt reduction on the health of the government is less clear than might appear at first. For example, when a homeowner sells her home to extinguish her mortgage, she also no longer owns the asset of her home. In the same manner, when the federal government reduces its indebtedness by retiring the debt, it also reduces its holding of assets. Whether this change is desirable or undesirable is difficult to answer.

Privatization might lead to a more efficient use of resources. Private ownership of land creates a strong incentive to use its resources most profitably. To the extent that highest profit equates to the highest-value use to society, private ownership is a benefit. Economists argue that this relationship between profit and social value is often the case. For example, the free-market pricing system probably does a better job of determining whether a parcel of land is better used for grazing or for agricultural crops.

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6. "The Think Tank Where Jim Watt's Ideas Live On," *Business Week* (October 24, 1983) p. 165.

As already discussed, however, economists acknowledge that there are certain cases in which free markets may fail to provide for the allocation of resources to their highest social value. First, private owners might tend to look too much to present use and not enough to future uses, although present use tends to push future prices upward, creating an incentive for conservation. Second, some uses create external social costs or social benefits. External social costs may result from private uses contrary to the society's best interest. For example, strip-miners of coal have no reason to prevent their wastes from running off as pollutants into public waterways because they do not bear the cost of the deterioration created by the runoff. Economists who are particularly supportive of free markets point out that the solution to the problem of external social costs lies in private bargaining between the polluting coal miners and those who must bear the pollution. Others point out that such a solution is unfeasible when there are many miners and many concerned individuals. Each of them might have a slightly different view of the problem, making agreement very nearly impossible.

Advocates of the free-market view point out that the effects of privatization should not be compared to the ideal, but rather to the actual alternative of public ownership. They point out that government decision makers, just like private decision makers, are driven by incentives that may lead to inefficient resource allocation. The primary argument levied against federal ownership is that special interest groups are disproportionately successful in influencing the decision-making process because they can trade votes with others to attain objectives that are of great benefit to their constituents. Opponents of privatization would counter by saying that political decision making gives greater weight to less wealthy interests by relying on voting that is proportional to population rather than on free-market "voting," which is proportional to wealth.

Privatization might also lead to a more detailed understanding of issues. Many economists argue that private ownership would mean that decisions would be made by people who have an intimate understanding of the alternative uses for a piece of land. These same economists argue that decisions made by even the most beneficent bureaucracy suffer from being distant from the actual properties that are to be managed. Examples abound where well-meaning government decision makers have required land-management procedures that are generally wise, but in specific cases irrational.

One example is the practice of rest rotation. The idea is to divide grazing areas into four parts and allow cattle to use one part each year. Rest rotation is rational for parcels of land that have adequate rainfall and gentle terrain. But to simplify management, the Bureau of Land Management requires the procedure under a variety of land and climatic conditions. Unfortunately, it is very costly when rainfall is inadequate or terrain is rugged. When rainfall is low, the soil may become barren and rest rotation can lead to excessive erosion, soil

compaction, and deterioration of stream banks. When the terrain is rugged, the costs of building the necessary fencing do not justify the resulting benefits.

On the other hand, many private landowners are large companies that are themselves so bureaucratized that they are no closer to the managed properties than the government itself. Supporters of free markets accept this but point out that with market decision-making as opposed to government decision-making, there is a competitive process that penalizes bad managerial decisions. Finally, those who oppose privatization point out that as a practical fact the quality of personnel in the public land-management agencies is often higher than in private firms. Proponents of privatization agree, but argue that were privatization to occur, this circumstance would change.

Generally, most authorities agree that privatization, like the Sagebrush Revolution, is likely to lead to greater development of western lands. Furthermore, many economists suspect that such a change in land use probably would lead to moving resources toward higher-valued uses as measured by dollar values. It is also very clear that there are important interests, including possibly those of future generations and certainly those of environmental preservationists, that would be compromised by such a policy. As usual, economic analysis cannot say that such a change is desirable, though they may feel that it promotes economic efficiency. Whether one regards economic efficiency to be desirable given conflicting claims is an issue of values.

CONCLUSION

There is no simple answer to the question: Can the free market work? It doesn't appear that a free-market system will lead to a rush to a dramatic overexploitation of natural resources. On the other hand, in the case of common property resources there is a tendency for free markets to fail to achieve the most effective use of the resources. It is also true that too much conservation of natural resources is no better than depleting them. There are costs and benefits to both choices. Economists find the idea of allocative efficiency useful in defining what a reasonable rate of use of natural resources is. Stated differently, economists recommend that natural resources be used now as long as the benefits of using additional units exceed the costs of using the additional units. Yet economics can only be used to advise policymakers since decisions must involve the weighing of ethical values.

The ideas of prices and markets have roles in deciding how to use natural resources. Groundwater resources cannot be effectively allocated using free markets, but the idea of bidding for rights to use groundwater or introducing

6. Suppose that solar energy is of infinite supply and can be substituted for finite natural gas, but that currently solar energy is much more expensive than natural gas. How would this affect society's use of gas and of solar energy through time?
7. Food is a natural resource. Would you favor using markets to allocate its use in a country on the borderline of malnutrition such as Ethiopia or Bangladesh?
8. Suppose that before the State Water Project had been built, California had a price for water that varied seasonally according to the monthly availability of water. How would that have changed the need for the new water supply system?

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13

THE U.S. DOLLAR
IS IT TOO STRONG OR JUST RIGHT?

During most of the past fifty years the U.S. dollar has been the strongest currency in the world. Americans and foreigners found its purchasing power in the United States and abroad to be strong in relation to other currencies. It became the world standard against which to measure other currencies and served as the prime unit for settling international payment balances. For a time, the international monetary community considered the U.S. dollar more valuable and useful than gold itself.

Throughout the 1970s, the purchasing power of the U.S. dollar dwindled. It could no longer be redeemed for gold, and its value compared to that of certain other key currencies depreciated. Other currencies were sometimes sought by foreigners in preference to the dollar, and some international transactions were being determined in terms other than the U.S. dollar.

Although the U.S. dollar was buffeted severely in the tempestuous seas of international finance, it stayed afloat. Measures were undertaken by policymakers to prevent it from sinking and to restore it to its premier position among

world currencies. In the 1980s the dollar rebounded and again is the strongest currency in the world—perhaps too strong.

HISTORY OF THE U.S. DOLLAR

Gold has been the elixir of humanity from the beginning. Exchanged, hoarded, coined, and used for both industrial and decorative purposes, gold has been instrumental in starting and winning wars, bringing wealth and culture to nations, and causing jealousy and disaster. People have worked for it and fought for it. Its greatest uses, in addition to decoration, have been as a medium of exchange and as a store of value. It has been coined since ancient times.

In the past various governments have tried to limit the use of gold as a money supply. Nevertheless gold is still an important standard for determining the value of money. The wide use of gold as money, or as backing for money, results from its general acceptance as a standard of value throughout the world. Gold's limited total supply, relatively stable annual production, and durability contribute to this acceptance. Because of its role as a monetary standard, gold is an important determinant of exchange value between currencies of different nations. For decades it has been the ultimate means of settling international balances of payment. Consequently, the amount of gold that a nation had for the support of its money supply was of major, if not critical, economic importance. Thus when the United States originally established its monetary system, it gave gold an integral role.

In 1792, the first coinage act in the United States set up a bimetallic money standard. That is, the act defined the dollar in terms of both gold and silver. The act defined a dollar as 371.25 grains of pure silver or 24.75 grains of pure gold. Thus, the mint ratio of the two metals was 15 to 1. When the market ratio subsequently deviated from the mint ratio, a shortage of gold coin developed. When the Currency Act of 1834 reduced the gold content of the dollar to 23.22 grains, the mint ratio changed to 16 to 1. Unfortunately, the new ratio overvalued silver at the mint, which resulted in a shortage of silver coin. The Subsidiary Coinage Act of 1853, which stopped the free coinage of fractional silver, further hastened the metal's virtual disappearance from the monetary system. Subsequent demonetization of silver occurred when the Coinage Act of 1873 practically eliminated the coinage of silver dollars. In 1879, the United States abandoned the inconvertible paper standard adopted at the outbreak of the Civil War and established a gold standard. This action set the dollar's prewar gold content of 23.22 grains and made the dollar convertible into gold.

The Gold Standard

Congress, however, did not establish a singular gold standard for the money supply until the turn of the century, when it passed the Gold Standard Act of

1900. This act ushered in the so-called golden age of the gold standard, which lasted until the outbreak of World War I. During this period, not only the United States but also most other major nations were on the gold standard. The most important of these nations were on the gold-coin standard, while others were on a gold-bullion or a gold-exchange standard. As World War I commenced, all belligerent nations abandoned the gold standard by refusing to redeem their currencies in gold and by prohibiting gold exports. In many cases, governments or their central banks called in gold coin and bullion in order to (a) prevent the nation's gold supply from falling into the hands of the enemy, (b) conserve the gold for the purchase of essential war material, (c) continue operations in the foreign-exchange markets, and (d) maintain enough gold reserves to preserve confidence in the nation's money supply.

In spite of the various problems involved, most nations returned to some form of gold standard during the 1920s, with the United States leading the way in 1919 by reconfirming the prewar gold content of the dollar. Britain, Switzerland, France, Germany, and other nations followed some years later. Gold coin, however, virtually disappeared (except in the United States) as most countries adopted gold-bullion or gold-exchange standards. In general, these postwar standards were managed (that is, subjected to restrictions and changes) to a greater extent than were the pre-World War I gold standards. High tariffs and other restrictions, heavy war debts, an unstable flow of international lending and gold payments, and other disturbances made the operation of the gold standard more difficult, especially in serving its function as the primary means of settling the international balances of payment.

With the beginning of the Great Depression in the early 1930s, countries abandoned the gold standard in great numbers. By the beginning of 1933, the United States and France were the only major nations left on the gold standard; and the United States went off it later that year. The general abandonment of the gold standard was precipitated in large measure by an international financial panic caused by demands by foreign creditors for repayment in gold of short-term liabilities, such as bank deposits, and short-term government and commercial obligations. In most cases, the total credit demands exceeded the gold stock held by individual nations. Because they did not have the ability to redeem these obligations in gold, many nations had no choice but to go off the gold standard.

Devaluation

With a 50-percent drop in the gross national product (GNP) between 1929 and 1933, foreigners began large-scale withdrawals of short-term liabilities from the United States. An increase in unemployment from 1.5 million to 12.8 million, along with widespread bank failures, and a rash of commercial bankruptcies, hastened the withdrawal. Although the U.S. gold supply (then about 40 percent of the world total) remained above $4 billion, the nation lost

over $270 million in gold in early 1933. In response, the United Stated abandoned the gold standard on March 6, 1933, when President Roosevelt placed an embargo on gold exports. Subsequently, the country returned to a gold standard, but it was feared by U.S. Treasury officials that re-establishment of the dollar at the old gold content, and with full convertibility, would lead to an extensive gold drain that would seriously affect the abilities of the banks to issue credit and would jeopardize the opportunity for domestic economic recovery.

After calling in virtually all of the nation's gold held by citizens, businesses, banks, and other organizations, the United States returned the gold standard on January 30, 1934. The new gold standard, however, differed substantially from that in operation prior to March 1933. Among the provisions of the Gold Reserve Act of 1934 were the following:

1. The value of the dollar in gold was reduced. The act set the gold content of the new dollar at 13.71 grains, compared to the previous content of 23.22 grains, a reduction of approximately 40 percent. Consequently, the price of gold was increased from $20.67 to $35.00 per ounce. This increase meant that the gold supply, then worth nearly $4.2 billion, increased in dollar value to $7 billion.
2. No currency of the United States was to be redeemed in gold. With some minor exceptions, gold was, in effect, nationalized.
3. The coinage of gold ceased, and all existing gold coin in the hands of the Treasury was converted into bullion.
4. The act prohibited individuals and firms from holding, transporting, exporting, or otherwise dealing with gold except under regulations specified by the Secretary of the Treasury.

Although a number of other nations subsequently returned to the gold standard, each had devalued its currency and introduced considerable management into its monetary system. By the outbreak of World War II, gold had lost much of its appeal as a monetary standard, and most of the gold standards were of a gold-bullion or a gold-exchange type. No major nation had returned to a gold-coin standard, and most nations of the world were on an inconvertible paper standard. Of course, during World War II the entire world went off the gold standard.

The Gold Avalanche

An avalanche of gold hit the world, especially the United States, in the latter part of the 1930s. The causes for this increase in gold supply were manifold. First, the increase in the price of gold encouraged its production. During the decade of the 1930s, the annual physical output of gold more than doubled. Second, trade increased with Asia, which paid for its imports in large part with

gold. The gold supply was further increased by the melting of scrap gold, which brought a greater monetary reward to the seller than prior to devaluation.

While the world experienced a substantial increase in the gold supply, the United States enjoyed an even greater influx of the precious metal. The amount of gold held in the United States rose from approximately $7 billion immediately after devaluation of the dollar in 1934 to $22 billion at the end of the decade. It continued to increase in the 1940s, peaking at $34.5 billion in 1949. The bulk of the increase, more than $16 billion, resulted from gold bullion imports. This was due partly to a favorable balance of trade but mostly to the flight of capital from Europe in response to the unsettled economic and political conditions preceding World War II. By 1949, the United States held 69 percent of the world's gold supply.

Bretton Woods Agreement (1944)

After World War II several nations returned to a form of gold standard under the auspices of the newly organized International Monetary Fund (IMF). Most of these national gold standards were limited. With the exception of the United States, redeemability of currency for gold, even for international purposes, was severely restricted by most nations throughout the world.

In 1944, finance representatives from several major industrial nations met at Bretton Woods, New Hampshire, to establish a new international monetary system. Because the U.S. dollar was the one major currency redeemable in gold, other nations agreed to define their currencies in relationship to the U.S. dollar. Moreover, they agreed to hold their exchange rates to within a plus or minus 1-percent range of the exchange rate established at Bretton Woods, New Hampshire. If the exchange rate of a nation tended to deviate beyond the established range, that nation's monetary authorities had an obligation to buy or sell U.S. dollars or its own currency to keep the exchange rate in line. The IMF agreed to make loans of gold, dollars, and other currencies to help nations keep their exchange rates stable.

Dollar Shortage

Due to the scarcity of goods and services throughout the world after World War II, especially in war-damaged nations, the demand for American dollars exceeded that of gold itself, as foreigners sought them to buy American products and to settle their international balances of payment. The Marshall Plan and reconstruction loans made by the United States to other nations at that time were helpful in alleviating to some extent the dollar shortage.

At the same time, a number of foreign nations began to accumulate dollar reserves for future use in purchasing goods and settling trade deficits. Because the dollar could be converted readily into gold by foreign governments and

central banks, it was as good as gold. In addition, American dollars could earn interest income when held in deposit at banks.

Surplus Dollars and the Decline in the U.S. Gold Stock

Circumstances became less favorable to the U.S. dollar in the 1950s. America's favorable international balance of trade became less favorable as (1) war-torn nations rebuilt their economies and increased their production of goods and services, (2) U.S. prices rose, making its products more expensive to foreigners, and (3) the U.S. encountered more competition in world trade markets. In addition, the nation spent more money to maintain military installations overseas and granted more foreign aid, and as American individuals and companies increased their investments abroad, the world dollar shortage eased and the U.S. international balance of payments became negative. As a result, many foreigners began converting American dollars into gold. This conversion caused gold to flow out of the United States, a trend that continued until 1971. By the middle of 1971, the nation's total gold reserve had dwindled from a peak of $24.5 billion in 1949 to $10.5 billion. Changes in American gold holdings are shown in Table 13-1.

This table indicates that the world's gold supply increased from $35.4 billion to $41.3 billion during the period 1949–1970. During that time,

TABLE 13-1

Estimated Gold Reserves of Central Banks and Governments, 1947–1989
(In millions of dollars)

Year	Estimated World Total[a]	United States	International Monetary Fund	Rest of World	United States (as a % of total)
1949	$35,410	$24,563	$1,451	$9,396	69
1950	35,820	22,820	1,495	11,505	64
1955	37,730	21,753	1,808	14,170	58
1960	40,525	17,804	2,439	20,280	44
1965	43,230	13,806	1,869	27,285	32
1970	41,275	11,072	4,339	25,865	27
1975[b]	49,555	11,559	6,446	31,550	23
1980	47,750	11,172	4,369	32,209	23
1985	44,026	11,120	4,380	28,562	26
1989	43,725	11,061	4,342	28,322	25

[a]Excludes USSR, other Eastern European countries, and the People's Republic of China.
[b]Beginning in 1972, valued at $42.22 per ounce rather than $35.00 per ounce.

SOURCE: *Federal Reserve Bulletin* (January 1987) and *International Financial Statistics* (March 1990).

however, the gold holdings of the United States dwindled by almost 50 percent, and its share of the world's gold supply decreased from 69 to 27 percent. Increased production and shifts in gold holdings caused sizable amounts of gold to flow into such nations as Belgium, France, West Germany, Italy, the Netherlands, Switzerland, and even the United Kingdom.

Between 1965 and 1970, gold reserves of central banks and governments dropped by almost $2 billion. This decline resulted from the sale of gold by central banks and governments to private sources, especially through the London and other gold exchanges. Speculation regarding possible devaluation of the currencies of some major nations forced the price of gold upward in the free markets. The drain of gold out of central banks and into the free markets was arrested for several months early in 1968, when the ten major nations of the world (the so-called Group of Ten) agreed not to supply the free markets with gold. This was done in anticipation of the devaluation of the British pound. The gold outflow from the United States continued, however, until President Nixon placed a ban on gold exports in August 1971.

BALANCE OF PAYMENTS

The nation's balance of payments was an integral factor causing the outflow of gold from the U.S., and it is an important determinant today of the dollar's value in world markets.

There are several ways to show U.S. international transactions. The finished picture will depend on the items included and the categorization of each item. Table 13-2 shows a typical presentation for 1989. It indicates that the United States imported $113.2 billion more in merchandise than it exported. This deficit was due largely to U.S. imports of oil, autos, steel and machinery. In addition, American tourists spent $0.8 billion less abroad than foreign tourists spent in America. The U.S. also sent $14.3 billion in pensions and other unilateral payments to persons living abroad. On the plus side, the $1.0 billion in net investment income from abroad offset some of our deficit in the balance of payments for 1989. In total, the United States ended up owing foreigners, $105.9 billion as a result of the deficit current account.

Settlement of International Payments

Until 1971, gold was the ultimate means by which international balances of payments were settled. A foreign nation whose balance of payments with the United States was negative could settle the debt in one of three ways: (1) by using dollars previously obtained and held in American banks to pay the difference; (2) by selling financial assets to Americans, which amounts to borrowing U.S. dollars; or (3) by selling gold to the United States. On the other

TABLE 13-2

United States International Transactions, 1989
(In billions of dollars)

U.S. Balance of Payments		
Merchandise trade balance		−113.2
Exports	+361.9	
Imports	−475.1	
Net military transactions		−5.7
Net investment income		+1.0
Receipts	+124.7	
Payments	−123.7	
Net travel and transportation expenditures		+0.8
Other services		+25.5
Balance of trade on goods and services		−91.6
Remittances, pensions, and other unilateral transfers		−14.3
Balance on current accounts		−105.9
Changes in U.S. and Foreign Assets		
Net U.S. assets abroad (−)		−125.7
U.S. official reserve	−25.3	
U.S. government assets	+1.1	
U.S. private assets	−101.5	
Net foreign assets in the U.S. (+)		+196.7
Foreign official assets	+7.4	
Other foreign assets	+189.3	
Statistical discrepancy		+34.9
Net change		+119.7
U.S. Official Reserve Assets (Net)		
Gold stock		11.1
SDRs		10.2
Reserve position in IMF		9.1
Foreign currencies		44.2
Total		74.6

SOURCE: *Economic Indicators* (March 1990) and *Federal Reserve Bulletin* (October 1989).

hand, if the United States owed a balance to foreigners, it settled by (1) paying out dollars from various accounts held in foreign or American banks; (2) selling American securities in foreign markets and using the money to pay trade debts; or (3) selling (paying) gold to foreigners.

Whether a foreign nation holding a balance of payments against the United States would increase its dollar holdings, increase its holdings of American financial assets, or require payment in gold depended on many circumstances, including the country's need for dollars, its current holdings of gold, and its desire to hold short-term financial assets for the purpose of obtaining interest income. The practice followed in each country depended in

large part on its reserves. Some countries, notably West Germany, France, Switzerland, Italy, and Belgium, had a tendency to build up gold reserves. Consequently, any substantial increase in their dollar claims could easily result in a gold outflow from the United States. Other nations, however, preferred to hold part of their reserves in dollars and part in gold. Still others tended to hold most of their claims in U.S. short-term assets.

Not only was the gold flow responsive to the action of individual nations, but also to moves by foreign persons or firms to increase or decrease their dollar holdings. If foreign interests decided to decrease their dollar holdings, they could exchange those dollars, through proper channels, for gold. Even if the foreigners did not convert their dollars directly into gold, they could exchange them for domestic currency at banks, which in turn converted the dollars into gold.

Settlement of international balances of payment by the sale of gold by one nation to another could take place without any physical movement of gold bullion or coins. A foreign nation, for example, could purchase gold from the United States to resolve a deficit U.S. balance. Instead of having the gold shipped, the foreign nation could simply have its newly purchased gold earmarked for its gold account at the Federal Reserve Bank of New York. This same nation could settle an adverse balance of payment with the United States by selling gold from its account to the United States. In January 1990, the Federal Reserve was still holding $13.5 billion in gold earmarked for foreign and international accounts. This amount was in addition to the $11.1 billion gold reserve held by the United States. Moreover, Federal Reserve Banks held $226 billion in U.S. government securities and $251 million in deposits in foreign accounts.

Changes in Gold Reserves

Prior to August 1971, the United States settled its deficit balance of payments in part through the exchange of gold for dollars held by foreign central banks and governments. Since August 1971, however, payments by the United States to foreigners have not been made in gold.

Between 1949 and 1971 the United States had numerous, and sometimes sizable, deficits in its balance of payments. As a result, foreigners substantially increased their dollar claims against the U.S. The resulting sizable increase in foreign holdings of short-term liquid assets in some years caused a drain of gold exceeding $1 billion from the United States. As the nation lost gold despite the overall increase in the total world's supply, other nations increased their holdings of gold for a variety of reasons, including the U.S. desire that they make their currencies freely convertible.

Table 13-3 shows the significant gains in the gold holdings of certain nations since 1949.

TABLE 13-3

Reported Gold Reserves of Central Banks and Governments, 1949 and 1990
(In millions of dollars)

	1949[a]	1990[b]	Percentage Increase
Belgium	$698	$1,422	104%
Canada	496	718	45
France	523	3,456	560
International Monetary Fund	1,451	4,380	202
Italy	256	2,814	999
Netherlands	195	1,855	851
Organization of Petroleum Exporting Countries (OPEC)	—	1,848	—
Switzerland	1,504	3,516	134
United Kingdom	1,688	803	–55
United States	24,563	11,061	–55
West Germany	—	4,018	—

[a]Valued at $35.00 per ounce.
[b]Valued at $42.22 per ounce.

SOURCE: *International Financial Statistics* (March 1990).

THE DOLLAR AND THE GOLD POSITION

The dollar problem is brought into clearer focus when the amount of gold is compared to formerly required reserves and a study is made of the causes of the gold outflow. The dollar problem occurred because the total amount of gold held by the United States compared to its various gold reserve requirements was narrowing. This developed in large part because the amount of dollars held by foreigners was increasing.

U.S. FREE GOLD RESERVES

In 1964, the United States held $15.5 billion of gold, of which $13.4 billion was required as reserves for backing Federal Reserve notes and deposit liabilities. The remaining $2.1 billion in so-called free gold was available for other uses, including the settlement of deficit balances of payments. This situation represented quite a change from 1949, when the United States had over $12 billion in free-gold reserves. Its free-gold reserve position in 1964 was made more precarious by the fact that foreigners also held $24 billion in dollar deposits and short-term American securities, which could easily and

quickly be converted into a demand for gold. Therefore, it was imperative that foreigners continue to hold dollars and short-term securities and settle future deficit balances against the United States by the use of dollar deposits and short-term securities if the U.S. gold supply was to remain secure. This situation eased considerably in 1965, however, when Congress voted to remove the gold-reserve requirement backing Federal Reserve Bank deposits. This action freed an additional $4 billion of the total gold reserves. Finally, in 1968, when free gold reserves had dwindled to less than $1.5 billion, Congress removed the 25-percent gold cover on Federal Reserve notes, an action that freed all of the U.S. gold supply for international use.

Foreigners held liquid dollar balances, rather than gold, for a number of reasons, including for the purpose of receiving interest income, as emergency reserves, and as a working balance to carry on daily transactions of international trade. In addition to holding government securities, foreigners also held several billion dollars in United States corporate-, state-, and local-government securities, which could have been sold for dollars and eventually converted into gold.

Another possible drain of the gold supply could result if there were a loss of confidence in the dollar. If, for example, Americans suspected that the dollar was to be devalued, it would behoove them to convert dollars to foreign currencies with the idea of converting the foreign currency back to dollars after the devaluation. In the interim, however, the American dollars held by foreigners could be converted into gold by foreign monetary authorities.

Role of International Monetary Fund

Nations that are short of foreign currency or gold to meet a temporary deficit balance of payments can obtain help from the IMF. Established in 1944, the fund has resources consisting of gold and the currencies of the 150 member nations, both of which are paid by each nation on a quota basis. The relative importance of each country in regard to international trade, national income, and population determines its quota. In 1989 the IMF held gold and foreign currency subscriptions valued at more than $100 billion in American dollars. Of this total, about $4 billion was in gold.

A nation desiring to borrow foreign currency or gold from the fund could do so by depositing a like amount of its own currency with the fund. Drawings from the fund for an amount equal to 25 percent of the borrowing nation's own quota are almost automatic. Approval of additional borrowing depends upon the borrowing nation's effort to take steps to eliminate its imbalance of payments. The borrowing nation has an obligation to repay its loan within a period not to exceed three to five years. Repayment is generally made by the borrower by repurchasing its own currency from the fund with gold or convertible currencies.

Cause of Gold Outflow and the Weakening of the Dollar

One common way often used by analysts in the 1960s and 1970s to determine the reason for the U.S. gold outflow was to cite specific categories of international payments that accounted for sizable portions of the nation's deficit balance of payments. In 1974, for example, when the U.S. deficit balance of payments was $5.1 billion, some analysts cited the country's $4.9 billion in military expenditures as the major cause of the deficit. Others pointed out that we spent over $8.1 billion on unilateral transfers, remittances, and pensions. Still others mentioned as inadequate certain categories on the credit side of the balance of payments, such as exports or the investment of foreign capital in the United States. In fact, such factors as high wage rates, high prices, or the Common Market were many times cited as limiting the nation's export of goods and services while stimulating imports. Using a chronological approach, another group blamed the deficit on the last major phenomenon or two that occurred before or while we were shifting from a positive to a negative balance of payments. Regardless of the cause, as the supply of U.S. dollars or dollar claims held by foreigners increased compared to the demand, the underlying strength of the dollar began to weaken. The one thing maintaining its strength was its convertibility into gold.

REMEDIES FOR GOLD OUTFLOW

Possible solutions for arresting the nation's gold outflow and strengthening the position of the dollar have centered on remedying the U.S. deficit balance of payments. But even without altering the balance of payments, the gold outflow could have been abated by inducing foreigners to hold more dollars and short- and long-term American securities. This latter method, however, would not have removed the potentially dangerous situation of having excessive dollar claims that could be converted readily into gold. Some of the corrective measures suggested involved a greater degree of control or management over exports, imports, capital flows, gold supply, and domestic economic measures. If such measures were implemented, the United States would have to weigh the advantage of a desirable balance of payments and a stable gold supply against the disadvantage of a certain amount of economic restriction. The nation also would have to weigh the merits of a favorable balance of payments against the possible adverse effect on the domestic economy of those measures adopted to obtain such an improvement.

Included among the measures suggested and/or adopted in the 1960s to arrest the gold outflow were the following:

1. Restrict imports.
2. Promote exports.
3. Reduce government spending abroad.

4. Reduce military spending overseas.
5. Reduce or eliminate foreign aid by
   a. using tying contracts (requiring U.S. grant money to be spent for U.S. goods or services) or
   b. encouraging other nations to help with aid.
6. Reverse capital outflows by
   a. setting higher interest rates,
   b. paying higher interest rates on foreign deposits,
   c. adopting an interest equalization tax, or
   d. restraining credit on foreign investment.
7. Reduce required gold reserves.
8. Devalue the dollar.
9. Revalue other currencies.
10. Abandon fixed exchange rates.
11. Increase IMF lending ability.

During the throes of the gold outflow from the mid-1950s to 1971, the United States used all of the preceding measures. It restricted imports by the use of tariffs, quotas, and limited duty-free foreign purchases by American tourists. It promoted exports through trade shows. It found ways to reduce government spending abroad and, except the spending for the war in Vietnam, cut back on overseas military spending. In addition, the U.S. reduced foreign grants and loans by sizable amounts and encouraged other nations to help with aid to the developing nations. It tried to reduce U.S. capital flows by setting higher interest rates, paying premiums on foreign deposits in the United States, and imposing an interest equalization tax. In addition, the banks, through the Federal Reserve, voluntarily restrained loans for foreign spending. The United States also freed more gold for foreign payments by eliminating the gold-reserve requirement behind Federal Reserve Bank deposits and Federal Reserve notes. Other nations, such as West Germany and Japan, revalued their currencies. In addition to these measures, rigid, fixed exchange rates were generally abandoned, and the International Monetary Fund created SDRs (special drawing rights) to expand its lending ability. When these measures failed to correct the deficit balance of payments and arrest the gold outflow, the United States finally devalued the dollar and stopped the convertibility of dollars into gold.

THE DOLLAR PRICE OF GOLD

Gold is bought and sold not only by governments and central banks throughout the world, but also in private markets. Until August 1971, the world monetary price of gold was well established, especially by the U.S. Treasury, at $35 per ounce. In the private gold markets, the largest of which is London, the price of gold is free to fluctuate with changes in supply and demand.

From the time the London Gold Market reopened in 1954 (after closing during World War II) until 1960, the free-market price of gold stayed close to the official monetary price of $35 per ounce. The supply of gold for the free market was obtained from three major sources: (1) new production, especially from the Union of South Africa, which mines three-fourths of the West's gold; (2) gold sales from Communist nations; and (3) monetary gold of central banks whenever the free price of gold rose above its monetary price.

The Gold Pool

With increased industrial use of gold, limited supplies coming into the market, and speculation during the 1960s that the United States might change its policy and devalue the dollar (raise the price of gold), the heavy demand for gold pushed up the price of gold in the free market to more than $40 per ounce. At that time eight major nations, including the United States and Great Britain, formed a gold Pool for the purpose of stabilizing the free price of gold near the monetary price of $35 per ounce.[1] Technically, the Gold Pool consortium agreed to sell gold when the price rose above $35 per ounce and buy gold when the price fell below the $35 monetary value.

With the perennial heavy demand for gold for industrial uses, a modest increase in supply, and the continuous belief that the United States, Great Britain, France, or some other major nation might devalue its currency, the Gold Pool was a net seller of gold, with most of its supply of the metal coming from the United States.

The Two-Tier System

As a result of its continuous balance of payments deficits, the United Kingdom, with the approval of the IMF, devalued the pound sterling by 14.3 percent, from $2.80 to $2.40, in November 1967. At that time a wave of gold buying hit the free market. Gold hoarders speculating that the United Kingdom would be forced to devalue again or that the United States or some other major nation would subsequently devalue its currency drove the price of gold well beyond $40 per ounce. In the next five months, the Gold Pool nations sold about $3.5 billion worth of gold, primarily from the United States, to the London market to try to keep the market price from rising too greatly. Faced with a continuous rise in the free price of gold in contrast to dwindling free gold reserves, the ability of the Gold Pool nations to supply the free market with gold was threatened. At that time, which was prior to removal of the gold cover on its

1. Other Gold Pool members besides the United States and Great Britain were Belgium, West Germany, France, Italy, the Netherlands, and Switzerland. France, however, ceased its participation in June 1967, shortly before the pool's heaviest gold losses began.

money supply, the United States had free gold reserves amounting to $1.5 billion. Consequently, on March 17, 1968, the Gold Pool nations agreed to end the operation of the Gold Pool and endorsed the establishment of a two-tier gold price. By this agreement, the Gold Pool nations ceased to supply gold to the free market. At the same time, they agreed to freeze world monetary reserves and stop buying gold for monetary purposes.

This action permitted the toleration of a two-tier system in which the free market price could deviate from the monetary price of gold without bringing about stabilizing measures by the major nations. It was hoped, however, that the freezing of world monetary gold reserves would force the producers to sell all their gold in the free market, thus driving the market price downward toward the monetary price of $35 per ounce. The Union of South Africa, however, contended that it should be able to sell in both the monetary market and the free market. In reaction to the agreement, South Africa for a year or more sold very little gold to either the private market or the central banks. From March 1967, until June 1969, the price of gold on the free market fluctuated between $37.00 and $42.40 per ounce. The scheme eventually worked as planned, however, because by December 1969, the free price of gold was down to $35 an ounce.

Special Drawing Rights (SDRs)

During the 1960s, world trade increased by more than 10 percent annually. In contrast, the total stock of international reserves, consisting primarily of gold, dollars, and pounds, increased by only three percent annually. Much of this relatively small increase in world reserves was accounted for by dollars because the United States, through its perennial balance-of-payments deficits, contributed to world international liquidity in the form of short-term liabilities to foreigners.

To overcome the world shortage of international liquidity, the Group of Ten worked and deliberated over a period of four years on a system of special drawing rights as a means of increasing world reserves.[2] In September 1968, member nations of the International Monetary Fund unanimously agreed to the concept of an SDR plan.

Debtor nations, such as the United States and the United Kingdom, were strongly in favor of the SDRs. Some of the creditor nations, however, were not so enthusiastic about the plan. Some nations, such as the United States, thought that the SDR amount should be a permanent addition to world reserves. Other nations saw the proposal only as a temporary expedient. In July 1969, a compromise was reached when it was agreed at a meeting of the Group of Ten

2. The Group of Ten consisted of ten world trade leaders, including Canada, Belgium, France, Italy, Japan, the Netherlands, Sweden, West Germany, the United Kingdom, and the United States.

that the equivalent of $9.5 billion in, SDRs, "Paper Gold" would be created over a three-year period. The new reserve asset became available on January 1, 1970.

The final agreement called for the creation of supplementary reserves in the form of special drawing rights (SDRs) established through the IMF. The SDRs were subsequently distributed to the member nations of the IMF according to each country's respective contribution quota. Thus, the United States received nearly one-fourth of the total SDRs created. The total issue of SDRs was subsequently increased, and in 1989 the total allocation of SDRs amounted to 21.4 billion.

Member nations cannot buy SDRs from the fund but can use their assigned SDR reserves to settle balance-of-payments deficits. All member countries are obligated to accept SDRs from debtor nations. No creditor nation, however, can be compelled to accept SDRs in excess of three times its allocation. Since SDRs carry an interest rate paid by the debtor nation, a creditor nation may desire to hold a greater volume than that required.

Special drawing rights can be issued for balance-of-payments purposes and to protect a nation's reserve position. Upon mutual agreement, one nation can use its SDRs to buy the currency of another nation. To encourage nations to accumulate other forms of reserves and not rely solely on their accumulation of SDRs, a provision in the agreement indicated that the average use of SDRs by a member nation must not exceed 70 percent of that nation's average accumulation over a five-year period.

Special drawing rights can be used between nations either on the basis of bilateral agreement or at the designation of the International Monetary Fund. In the latter case, the country desiring to use SDRs can request the IMF to designate certain countries to receive (accept) SDRs and the amount to be received.

The United States has been active in using SDRs in its exchange transactions for both payments and receipts. In 1989 the United States was holding 8.0 billion in SDRs; other large holders were Japan and West Germany.

Although SDRs cannot be converted directly into gold, the unit value of an SDR was initially equivalent to the gold content of the U.S. dollar. Consequently, when the U.S. dollar was devalued and the price of gold raised from $35 per ounce to $38 per ounce, the value of an SDR was likewise increased to $1.09 per unit. Again, when the United States raised the price of gold to $42.22 in February 1973, the transaction value of an SDR increased to $1.21 per unit ($42.22 ÷ $35.00 = $1.21). To improve the transferability of SDRs and move away from the exclusive reliance on the dollar as a means of determining the value of SDRs, the IMF in 1974 widened the base of valuation by including 15 other currencies besides the U.S. dollar in the "currency basket." For simplification this was reduced to five currencies on January 1, 1981. In 1990 the U.S. dollar was weighted 42 percent and the German mark

19 percent. The Japanese yen was weighted at 15 percent, and the French franc and British pound had weights of 12 percent.

The Demise of Gold

The various currency adjustments, along with the creation of SDRs, tight money, and higher interest rates at home, took some of the burden off the U.S. dollar as a supplier of international liquidity. But the improvement of the U.S. balance-of-payments position was short-lived. Early in 1971, the United States experienced a substantial deterioration of its trade position and faced a deficit balance of trade for the first time in nearly a century. Speculation emerged that the dollar and/or some other currencies might subsequently be devalued. Consequently, the market price of gold began to rise substantially. By mid-1971, even nations that for years had retained "excess" U.S. dollars and refrained from redeeming them for gold in the interest of international financial stability began to question the wisdom of holding dollars as opposed to gold. By the end of July 1971, it was estimated that foreign official institutions held between $40 and $50 billion in liquid claims against the United States. This was double the amount of a year earlier. On the other hand, the total U.S. gold stock was only $10.4 billion.

In the spring of 1971, many U.S. dollars were being sold in exchange for other currencies, particularly West German marks. Speculation was that the mark would be revalued and thus worth more dollars, and that the exchange rate between the dollar and the mark would be moved away from the official monetary exchange rate (27.5 cents) in favor of the mark. The sale of dollars became so heavy that the foreign exchange markets in West Germany, Switzerland, Belgium, Austria, and the Netherlands were closed in early May 1971. When the markets reopened, changes were made. Effective May 9, 1971, the Austrian schilling was revalued. The next day the West German government announced that the mark would be allowed to "float" (that is, the rate of exchange was unpegged) to permit the market to seek and establish new exchange rates between the mark and other currencies, particularly the U.S. dollar. At the same time, the Netherlands' guilder also was floated and the Swiss franc was revalued to 4.08 per U.S. dollar (24.5 cents). Within a short period, the average appreciation of world currencies with respect to the dollar was 6–8 percent; among major U.S. trading partners the rise in value was 10–12 percent. By July 1971, the mark had floated upward from 27.5 cents to a market value of 31.6 cents.

Devaluation of the Dollar—1972

It was under these circumstances that President Nixon, on August 15, 1971, announced his New Economic Policy. In addition to imposing a wage-price

freeze for the domestic economy, the New Economic Policy established a 10-percent surcharge on imports and suspended the convertibility of U.S. dollars for gold.

It was evident that the U.S. dollar was overvalued in world markets and that currencies of those nations with substantial balance-of-payments surpluses, such as Japan and West Germany, were undervalued. It was also evident that the United States could not continue forever as a major supplier of international liquidity for the world. In spite of this, the action of President Nixon on August 15, 1971, startled the financial world and brought about serious repercussions.

The United States subsequently used the 10-percent surcharge as a club to encourage various nations to adjust their currencies and to take other steps for the improvement of world trade. In December 1971, after numerous meetings, the Group of Ten, in cooperation with the IMF, agreed to the so-called Smithsonian Accord, by which they pledged to work for an "effective" realignment of important world currencies. Subsequently, in early 1972 the U.S. import surcharge was modified and the U.S. dollar was devalued by 8.57 percent, when Congress officially raised the price of gold to $38 per ounce. As a part of the international accord, the Japanese agreed to revalue the yen, while the mark and the guilder were to continue to float before setting new exchange values for them. The French franc and the British pound were to hold their previous par values.

The United States balance of payments failed to improve to any substantial degree in 1972. Moreover, the international monetary authorities failed to come up with any further solutions to world monetary problems. The relationship of the American dollar to foreign currency, especially the mark and the yen, continued to deteriorate. In addition, the free-market price of gold rose to more than $60 per ounce, indicating that speculators were still unconvinced that the price of gold had been settled. Consequently, in February 1973, the United States again devalued the dollar, this time by 10 percent. At the same time, the U.S. raised the price of gold to $42.22 per ounce.

A prolonged meeting of the Committee of Twenty (an enlargement of the original Group of Ten) in 1973 developed an outline of reforms and set a target date of July 31, 1974, to implement the reforms. The meeting, however, failed to produce any substantial remedies for world monetary problems. In addition, the Arab oil embargo in late 1973 and early 1974, and the subsequent heavy increases in the price of oil, had an adverse effect on the economies and balances of payments of the United States, Japan, West Germany, France, the United Kingdom, and other industrial nations. The countries that belonged to the Organization of Petroleum Exporting Countries (OPEC) began having more influence on world financial matters as a result of their accumulation of dollars and other currencies resulting from new higher prices for crude oil. This brought a new monetary problem to the international scene as the question

for OPEC nations now became how to invest or recycle these dollars back into the world money markets.

As world financial conditions became more uncertain, speculators bid the price of gold to more than $175 per ounce by the summer of 1974. With the announcement that the United States would permit its citizens to purchase and hold gold beginning December 31, 1974, the price of gold in the free market reached $200 per ounce by Christmas. When gold sales in America proved to be less vigorous than anticipated, however, the market price of gold dropped back below $200 per ounce in early 1975.

WEAKENING OF THE U.S. DOLLAR AFTER DEVALUATION

Because the United States no longer converts dollars into gold for foreign treasuries and central banks, and foreign nations no longer fix their currencies in terms of gold or U.S. dollars, supply and demand now play a more dominant role in determining foreign exchange rates. Meetings under the sponsorship of the IMF, the World Bank, and the Group of Ten countries in the past few years have produced little progress in the correction of disorderly exchange markets or in the establishment of a new international monetary system.

In the absence of a new international order, the currencies of many countries have been allowed to float, meaning that the supply and demand for a particular currency affects its exchange rates. An increase in demand for, or shortage of supply of, a particular currency will strengthen its value. That is, its price will rise in terms of other currencies. On the other hand, a decrease in demand for a particular currency, or an increase in supply, will weaken a currency so that its value falls in terms of other currencies.

Because the United States has recently experienced substantial deficits in its balances of trade and its balances of payments, as shown in Figure 13-1, the supply of dollars abroad, or dollar claims against the United States, increased substantially during the 1970s and early 1980s. These claims caused the value of the dollar to weaken vis-à-vis many other currencies of the world, as shown in Table 13-4. Although the U.S. dollar strengthened in relation to a few currencies, it weakened relative to numerous major currencies. The weighted average exchange value of the U.S. dollar against currencies of the other Group of Ten countries, for example, declined 27.8 percent between 1970 and 1980. In constant (real) dollars, this drop was 15.4 percent. Although the dollar strengthened in the first half of the 1980s, it weakened again in the second half.

A falling value of the U.S. dollar, of course, acts as a corrective factor for the U.S. trade deficits. As the dollar falls in value, U.S. dollars cost less in terms of foreign currencies that are rising in value relative to the dollar.

FIGURE 13-1

U.S. International Transactions, 1981–1989

SOURCE: *Economic Indicators* (March 1990).

Foreigners, therefore, have to pay less for American goods, and Americans have to pay more for foreign goods and services. In the absence of offsetting changes, this trend eventually causes U.S. imports to decrease and U.S. exports to rise. Many other factors could also help reverse trade deficits, including (1) a more rapid expansion in the economies of other major nations that could encourage them to import more goods and services; (2) a revaluation of strong or undervalued foreign currencies; (3) a slowdown in the U.S. inflationary rate compared to other nations; and (4)the establishment of a new international monetary system. There are also dozens of minor factors that could be used to limit imports and dollar claims against the United States.

Eurodollars

One of the most mystifying forces affecting the value of the dollar, the price of gold, and the status of international liquidity in the past two decades has

TABLE 13-4

Foreign Exchange Rates, 1970–1990
(Currency units per U.S. dollar, except for U.K.)

	1970	1980	1985	January 1990	%Change[c] 1970–80	%Change[c] 1980–85	%Change[c] 1985–88
Belgium (Franc)	49.6	29.2	59.3	35.4	–41.1	+103.0	–40.3
Canada (Dollar)	1.04	1.17	1.37	1.17	+12.5	+17.1	–14.6
France (Franc)	5.5	4.2	8.9	5.8	–23.7	+111.9	–34.9
Germany (Mark)	3.6	1.8	2.9	1.7	–50.0	+50.0	–41.4
Italy (Lira)	627.1	856.2	1908.9	1261.9	+36.5	+123.0	–44.0
Japan (Yen)	358.1	226.6	238.5	145.0	–36.8	+05.2	–39.2
Netherlands (Guilder)	3.6	2.0	3.3	1.9	–45.5	+65.0	–42.4
Sweden (Krona)	5.2	4.2	8.6	6.2	–18.3	+104.7	–28.0
Switzerland (Franc)	4.3	1.7	2.6	1.5	–40.5	+52.9	–42.5
U.K.[a] (Pound)	239.6	227.7	129.7	165.1	+7.1	+43.1	–27.3
U.S.[b] (Dollar)	121.1	87.4	143.3	93.0	–27.8	+63.6	–35.1

[a]U.S. cents per pound.
[b]Index of weighted-average exchange value of U.S. dollar against the currencies of 10 industrial countries, 1973=100.
[c]A positive change designates a gain in the U.S. dollar. A negative change is a gain for the foreign currency.

SOURCE: *Federal Reserve Bulletin* (June 1971 and March 1990).

been the Eurodollar market. By simple definition, a *Eurodollar* is a U.S. dollar on deposit in a foreign commercial bank. It can come into existence when someone transfers a dollar deposit from a U.S. bank to a foreign bank or when someone buys U.S. dollars in exchange for other currencies and then deposits the dollars in a foreign bank. Although there is a difference of opinion, economist Milton Friedman maintains the Eurodollars are also created in the same manner that dollar demand deposits are created in regular domestic banking practice. More mystifying is the fact that most of the actual dollars underlying Eurodollar deposits never leave the United States.

According to the Federal Reserve, "A bank accepting a Eurodollar deposit receives, in settlement of the transaction, a dollar balance with a bank in the

United States. A bank making a Eurodollar deposit or loan...completes the transaction from its U.S. bank balances."[3] Consequently, as Eurodollars are transferred around the world, the dollar balances supporting them are merely changed from one bank account to another within the American domestic banking system, or even within an individual U.S. bank.

Although the Eurodollar market is worldwide, London is the center of the market. Furthermore, large U.S. banks are the major holders of and dealers in Eurodollars. The Eurodollar market operates under the supervision of the Bank for International Settlements (BIS), but to date it has exerted little control or regulation over the Eurodollar market.

Petrodollars

In the 1970s, there was also a growing concern about the effect on international payments of the dramatic rise in dollar and other currency holdings of OPEC. The dollar holdings, often referred to as petrodollars, rose sharply as a result of increases in the price of oil exported to the United States and other industrial nations. In a peak year, for example, the gross transfer of purchasing power realized through import receipts of OPEC countries was estimated to be the equivalent of $100 billion, of which $95 billion was from the export of oil. After subtracting imports and grants to developing nations and making a few other adjustments, the OPEC nations were left with a $60 billion surplus in their balance of payments. Estimates indicated that of the $60 billion, OPEC nations invested $11 billion directly in the United States. About one-half of the investments made in the United States were in the form of marketable government securities. Another $1 billion was used to buy real estate. The remainder was placed in banking and money market liquid assets, such as large negotiable certificates of deposit.

The high price of oil caused substantial shifts in balances of payments, especially of the oil-exporting and oil-importing nations. In addition, the "recycling" of petrocurrencies has had a substantial impact on various economies, depending on the flow and direction of OPEC spending, lending, and investment. Today the impact of OPEC is far less, primarily because of the drop in oil prices. U.S. oil imports from OPEC in 1988 amounted to $24 billion, compared to $55 billion in 1980.

European Monetary System

In March 1979, the European Economic Community, in an effort to help bring about stability in the international exchange markets, launched the European Monetary System (EMS). Early in the 1970s, the Common Market attempted to accomplish a similar adjustment through an arrangement called the "snake," in which member nations agreed to limit currency fluctuations against one

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3. *Federal Reserve Bulletin* (April 1984).

another to no more than 2.5 percent, so that their currencies would move up and down in unison against the U.S. dollar and the Japanese yen. The "snake" was sometimes referred to as the "snake in a tunnel" because movement was limited and the average value of the currencies was to fluctuate no more than 2.5 percent against the U.S. dollar. Stability was to be accomplished through the buying and selling of dollars to prevent currency deviations beyond the targets. The original snake was short-lived. Britain, France, and Italy withdrew because of high domestic inflation rates and an inability to keep on par with the soaring value of the West German mark.

The current EMS is an improved three-part arrangement:

1. It links ten European currencies (those of the Common Market nations) by permitting their exchange rates to fluctuate no more than plus or minus 2.25 percent against one another.
2. It established a new currency, the ECU (European Currency Unit), as a reserve asset to alleviate the burden on the U.S. dollar. The ECU is defined as a basket of European Community currencies and is equivalent in value to an SDR.
3. It established a European Monetary Cooperation Fund (EMCF) into which member nations contributed part of their gold, U.S. dollars, and domestic currencies. The original fund created was equivalent to $65 billion, or 50 billion ECUs.

In the new system, banks and government treasuries endeavor to strengthen their currencies through the buying and selling of Common Market currencies and ECUs instead of U.S. dollars. This arrangement, of course, avoids the side effects on the U.S. dollar that arise from its sale and purchase.

The EMS survived its early years in spite of the skeptics. It did not encounter any serious problem or face any major tests. By 1989 the fund had accumulated the equivalent of $57 billion in U.S. dollars, other foreign currencies, SDRs and gold, against which it issued $42.5 billion in ECUs to contributing nations.

U.S. External Liabilities

As a result of continuous and sizable deficits in the U.S. balance of payments in the 1960s and 1970s, foreigners accumulated large dollar claims against the United States, and many of them enhanced their reserve positions. Table 13-5 shows the size of these claims in 1978 and 1989.

Additional information indicates that considerable portions of the U.S. external liabilities to industrial countries were owed to Japan and West Germany. In addition, OPEC nations held a total of $75 billion in official reserves, compared to $12.0 billion in 1973, prior to the oil embargo and oil-price explosion. Because the value of the U.S. dollar in foreign-exchange markets is determined primarily by supply and demand, it is not difficult to see

TABLE 13-5

U.S. External Liabilities and Claims, March 1978 and 1989
(In billions of dollars)

	1978		1989	
U.S. external liabilities		$244.37		$1033.45
Central banks and governments		$156.85		$303.50
Industrial countries	$124.80		$208.47	
OPEC countries	24.30		30.71	
Other countries	7.75		64.32	
Other banks and foreigners		79.76		721.02
International agencies		7.76		8.93
U.S. external claims		130.05		631.09
Net liabilities		$114.32		$402.36

SOURCE: *International Financial Statistics* (April 1990).

why the dollar weakened during the 1970s with respect to certain foreign currencies.

THE 1980s—THE DOLLAR REBOUNDS

The U.S. dollar fell substantially against most major currencies in the 1970s. By mid-1980 it had fallen 27.8 percent against other gold-country currencies (Group of Ten nations) plus Switzerland, as shown in Table 13-4, and in 1980 it took $1.30 to equal 1 SDR ($1.00 = SDR 0.769). After 1980, however, the value of the U.S. dollar rebounded remarkably. By mid-1985, it had gained against every major country of the world and had risen 63.6 percent against Group of Ten currencies. But it weakened again between 1985 and 1990.

Many factors have added to the strength of the dollar in the past years. In the fall of 1979, for example, the Federal Reserve announced its plan to switch from a policy of stressing the use of interest rates in preference to emphasis on the money supply as a means of combating inflation. The resulting high interest rates, ranging up to 20 plus percent, encouraged a flow of foreign investment into the U.S. and discouraged foreign borrowing from the U.S. This flow was accelerated by the rapid decline of inflation in the United States since 1982. The U.S. has once again become a prime area for investment, with high interest rates, low inflation, and a stable political environment. French authorities estimated that $150 billion of European capital was transferred to the United States in 1983, and that the amount would rise to $300 billion by 1988. Some of this transfer, or investment, of funds was no doubt by speculators, who

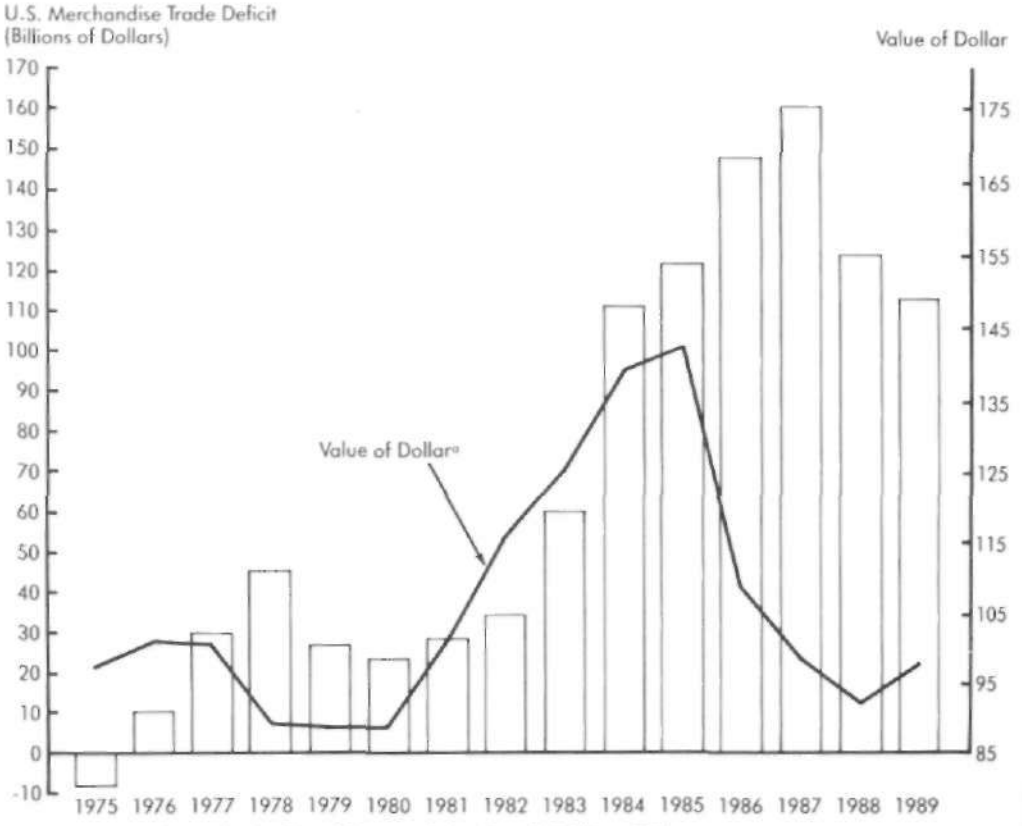
would move back into their own currencies if and when the dollar was to fall in value.

As the dollar strengthened, it became easier for Americans to purchase foreign goods and services and more difficult for foreigners to purchase U.S. goods and services or to borrow U.S. dollars. This situation, of course, aggravated the nation's balance of payments. The relationship between the strength of the dollar and the U.S. merchandise trade balance can be observed in Figure 13-2.

At the annual economic summit of the seven major industrial nations (the so-called Group of Seven) held in London in June 1984, representatives from

FIGURE 13-2

Comparison of Trade Deficits and Value of the Dollar



[a]Multilateral trade-weighted value of the U.S. dollar (March 1973 = 100).

SOURCE: *Economic Report of the President* (1990) and *Economic Indicators* (January 1990).

other countries complained about high U.S. interest rates. Some nations suggested that the United States take action, including lowering interest rates, easing its money supply, reducing its fiscal deficit, and intervening in foreign-exchange markets in order to depress the value of the dollar. Some even suggested that the United States should moderate (slow down) its rate of disinflation. Early in 1984 the Organization of Economic Cooperation and Development (OECD) admonished the United States to reduce its deficit and lower interest rates. At the same time, political factions in France and West Germany were suggesting the imposition of a domestic tax penalty on any of their currencies invested in the United States.

WAS THE U.S. DOLLAR TOO STRONG?

Not only did foreigners complain about the strong dollar, but many Americans did likewise. Because a strong dollar makes American goods and services and U.S. travel more expensive to foreigners, some American economists and international financial banks blamed part of our growing balance-of-payments deficit on an overvalued dollar.

In addition, many U.S. firms and industries indicated that the strong dollar added to their loss of markets here and abroad. Union leaders and others blamed the strong dollar for some of the nation's unemployment. U.S. trade representative William Brock stated that the dollar's strength would force more companies to establish plants overseas in order to compete in U.S. and world markets. Ford Motor Company executives maintain that $750 of the $2,000 cost-advantage the average car made in Japan has over a similar car produced in the United States, is due to currency misalignment.

John Williamson, senior fellow at the Institute for International Economists, calculated that in 1983 the dollar was overvalued by 24 percent against major currencies, and that the Japanese yen and West German mark were undervalued by 5 percent. Ford Motor Company officials suggested that the dollar valued at 233 yen in Japan should really be valued at 180 to 190 yen.

Although a strong U.S. dollar is popular with Americans traveling abroad in Europe, Asia, and Latin America and with those who buy imports, it spells disaster and unemployment to U.S. exporters. It is blamed for a large part of the record U.S. balance-of-payments deficits, markets lost by U.S. firms, decreased agricultural sales, increased unemployment, and moves by U.S. firms to locate plants overseas.

As a final result of the adverse effects of the strong dollar, U.S. finance and trade officials in the mid-1980s were encouraging other industrial nations, especially Japan and West Germany, to stimulate their economies. It was hoped that more growth in these economies would lead to increased imports from the United States and lessen the U.S. deficit balance of payments. In 1985 and 1986, for example, the U.S. deficit balance of payments exceeded $100

billion annually, and the U.S. became a net importer of agricultural products for the first time in recent history. Moreover, a strong protectionism movement developed in Congress, leading to enactment of the Omnibus Trade and Competitiveness Act of 1989, which contained some protectionist measures.

During the period of the U.S. dollar's greatest strength, at a meeting in the fall of 1985, finance ministers from five leading nations (France, West Germany, Japan, the United Kingdom and the United States) agreed to stimulate their economies. They also agreed to reduce currency imbalances among the countries, in effect calling for strengthening other currencies with respect to the U.S. dollar through exchange-market intervention. The ministers also agreed to coordinate reductions of interest rates to stimulate the economies of various nations. These goals were reinforced at the economic summit meeting of the heads of state in May 1986.

As a result of subsequent economic changes, including the declining inflation rate, lower interest rates, continued reduction of oil prices, the enactment of the Balanced Budget and Emergency Deficit Control Act (Gramm-Rudman-Hollings), the U.S. dollar weakened and, by January 1990, its value had declined by 35.1 percent to a value of 93.0 (March 1973 = 100) against currencies of other leading nations, compared to a high of 143.3 in 1985 as shown in Table 13-4. In addition, the dollar value dropped from $1.00 to $1.32 per SDR. Although the U.S. balance of payments had improved a little by 1989, it was still running in excess of $100 billion annually.

By 1989, the U.S. dollar declined to 88.7. Early in 1989, however, the dollar began to strengthen, and the Group of Seven nations, along with the United States, displayed concern. In accord with a previous agreement to stabilize the dollar, Britain, West Germany, and Japan raised their bank discount rates, and the Federal Reserve Board weighed the merits of lowering its federal funds rate in spite of its continuing concern about domestic inflation.

WHAT IS THE DOLLAR'S PROPER VALUE

It is difficult to say what the proper or optimum international value of the dollar is, or should be. Exporters of manufactured goods, farmers, and foreign visitors favor a weaker dollar. Importers, bankers and U.S. travelers abroad prefer a stronger dollar. The value of the dollar not only affects importers and exporters, but also jobs. It was estimated by labor experts that in the first half of the 1980s the strong dollar, through the loss of exports, was responsible for the loss of one million manufacturing jobs in the United States.

The federal government can adjust the value of the dollar by using certain measures, including the purchase or sale of dollars and/or foreign currencies, manipulation of interest rates, and exchange controls. If the United States wants to adjust or stabilize the value of the dollar or its exchange rate, it may attempt to do so through unilateral action or through coordinating economic

policy with other nations. The latter course is more likely to succeed and was the one chosen by Group of Seven nations in the spring of 1989, when the U.S. dollar appreciated 11 percent against both the German mark and the Japanese yen. The dollar rose from $1 = 1.83 marks in January 1989 to $1 = 2.1 marks in early May. At the same time, the dollar rose from $1 = 127.4 yen to $1 = 141.4 yen. By January 1990 the mark was at 1.7 and the yen at 145.0.

CONCLUSION

The decline in the value of the U.S. dollar during the 1970s is attributable in large part to continuing large deficits in the U.S. balances of trade and payments. Numerous factors contributed to the U.S. trade deficits, including (1) the nation's ongoing reliance on large-scale imports of foreign oil; (2) Americans continued high rate of inflation; (3) the increased demand by Americans for foreign products, such as autos, steel, shoes, electronic equipment, and machine tools; and (4) the pace of U.S. economic expansion compared to that of other major industrial nations of the world. U.S. economic recovery from the 1974–1975 recession preceded and was more vigorous than that of the other industrial nations. In addition, the U.S. money supply grew at a brisk clip. Therefore, Americans purchased more goods from foreigners than foreigners purchased from the United States.

The nation's large trade deficits aggravated the fall in the value of the dollar in foreign exchange markets. Complicating the situation has been the rise of the Eurodollar and petrodollar markets and the growth of U.S. external liabilities. At recent international monetary meetings, the United States and some others have suggested that political leaders in such nations as Japan and West Germany, which have had sizable surplus trade balances with the United States, should stimulate their economies more vigorously. By doing so, they hoped to encourage more U.S. exports, reduce the U.S. trade deficit, and stabilize the value of the dollar in foreign-exchange markets.

At times, a government may intervene directly in the foreign-exchange market to shore up its currency. In the summer and the fall of 1977, for example, as the dollar continued to fall in value, the Federal Reserve entered the foreign-exchange markets, where it sold marks and bought sizable amounts of dollars to help stabilize trading in the major monetary centers. Again, in the fall of 1978, in response to a particularly severe decline in the exchange value of the dollar, the United States announced a dramatic program to bolster the position of the dollar. This program included borrowing SDRs from the IMF to purchase foreign currencies, borrowing from foreign central banks, selling gold from the U.S. Treasury to buy dollars, issuing U.S. government securities

in foreign currency denominations, and raising the member-bank discount rate by a full percentage point.

A turnaround in the value of the dollar came in 1981. The continuation of high interest rates, tight money, disinflation, growing investment in the United States by foreigners, and stable political conditions improved the strength of the U.S. dollar. Between 1980 and 1985, the U.S. dollar gained against every major currency in the world and improved 63.6 percent against the currencies of the Group of Ten countries.

Although the strengthening of the dollar was favorable in many respects, especially to American travelers abroad and U.S. importers of foreign goods, it has had adverse effects. It has aggravated U.S. unemployment, caused a loss of markets here and abroad for some U.S. firms, accelerated the movement of U.S. producers to overseas locations, and aggravated the U.S. balance-of-payments deficit.

In the mid-1980s the situation was reversed from that of the 1970s. Instead of concern about a weak dollar, the big question was, is the U.S. dollar too strong? Consequently, by 1986 the U.S. was taking measures to reduce the strength of the dollar.

By the end of 1988, the dollar had declined 38 percent to an index value of 88.7 against the 10 major currencies and $1.32 per SDR. As the dollar began to strengthen in 1989, however, the Group of Seven nations began taking measures to brake its further rise. No one seems sure what the dollar's optimum value may be and where that value will go from here.

QUESTIONS FOR DISCUSSION

1. Should the United States be concerned about a rise or fall in the foreign exchange value of the dollar?
2. Should the United States lower interest rates?
3. Would you recommend that the United States intervene in the foreign exchange market to adjust the value of the dollar?
4. Do you favor fixed or flexible exchange rates?
5. Suggest a program for reducing or eliminating the U.S. deficit balance of payments.
6. Should the United States restore the gold reserve requirement (cover) for Federal Reserve notes?
7. Do you see any serious economic consequences from the use of petrodollars, yen, or other foreign currencies to purchase U.S. real estate and real assets, such as banks and manufacturing firms?

8. What is your position regarding the creation of additional SDRs as a means of increasing international liquidity?
9. Do you see any serious threat to the U.S. dollar resulting from the creation of the European Monetary System?
10. What do you think is the answer to foreigners' complaints about the strength of the U.S. dollar?

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14

THIRD WORLD DEBT
IS A BAILOUT THE ANSWER?

The current external debt problem of developing countries is and will remain one of the most serious challenges of the 1990s. Many of these countries are on the verge of default and bankruptcy. They simply do not have the ability to repay their debts or, in some cases, even meet their interest payments.

The magnitude and concern about the problem is evident from the plethora of writing about the subject. According to the IMF-World Bank Joint Library, since the formal outbreak of the debt crisis in 1982, more than 430 books and some 2975 articles and working papers have been written about external debt.

Lending to developing countries by private banks located in wealthier nations is not a recent phenomenon. Governments, and government-owned financial institutions, also have a long history of lending to governments and businesses within developing countries. Infrastructure development and the building of industrial bases require huge amounts of loanable funds. Traditionally, developing countries, because of their limited production capability, have

14

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Lending to developing countries by private banks located in wealthier nations is not a recent phenomenon. Governments, and government-owned financial institutions, also have a long history of lending to governments and businesses within developing countries. Infrastructure development and the building of industrial bases require huge amounts of loanable funds. Traditionally, developing countries, because of their limited production capability, have

found it difficult to forego current consumption in order to devote resources to the growth of heavy industry and the facilities necessary to the development and support of an industrial base. Often, developing countries must import a significant portion of the machinery, materials, and expertise from already industrialized countries. Purchasing these goods and services usually requires large loans.

With the exception of England, most of the developed nations initially depended heavily upon foreign borrowing to support their internal growth. The United States, for example, was a major borrower of funds from foreign banks during the industrialization period from 1840 through 1880. The inflow of funds allowed the nation a higher rate of economic growth and enabled it to finance a balance-of-payment deficit until such time as U.S. businesses were able to repay interest and principal out of profits.

Although there is a long history of lending to developing countries, the last 15 years has seen unprecedented growth in such loans. According to *World Economic Outlook*, released by the International Monetary Fund (IMF) in 1989, developing countries now have external debts of $1.3 trillion (see Table 14-1). About 60 percent of this debt is owed to commercial banks and other private creditors. The cost of servicing this debt (interest plus amortization) is nearly $185 billion annually. Some private sources, however, estimate the total debt of developing countries to be nearly $1.5 trillion.[1]

NEED FOR LOANS BY DEVELOPING COUNTRIES

A tremendous increase in borrowing by the developing countries occurred following the oil embargo of 1973–1974. Prior to the Organization of Petroleum Exporting Countries (OPEC) oil embargo, developing countries had never depended heavily upon external borrowing to finance balance-of-payments deficits. However, the tremendous increase in the price of crude oil following the embargo, and the large price increases for oil again in 1979–1980, stimulated by worldwide inflation, caused problems in the current accounts of the balance of payments for most oil-importing countries. The burden on the balances of payments for the industrial countries was alleviated by the inflow of funds through their capital accounts. This inflow was a result of the major oil-exporting nations' investments of their surplus funds in the commercial banks of the industrial countries.

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1. Lipson, Charles. "The International Organization of Third World Debt," *International Political Economy* (New York, NY: St. Martin's Press, 1987).

TABLE 14-1

Developing Countries' External Debt
(Debt in billions of U.S. dollars, and ratios as percentages)

	1980	1985	1986	1987	1988	1989	1990
Total debt	633.3	1,023.0	1,114.1	1,230.9	1,230.9	1,279.7	1,336.6
Short-term	133.9	161.5	169.8	192.2	197.2	203.5	212.3
Long-term	499.4	861.5	944.3	1,038.7	1,042.5	1,075.5	1,124.3
Unguaranteed[a]	96.9	143.0	137.9	129.4	120.4	114.4	112.7
Guaranteed[a]	402.5	718.5	806.3	909.3	922.1	961.1	1,011.6
To official creditors	195.6	346.0	399.7	468.2	490.1	522.7	557.3
To financial institutions[b]	166.5	314.1	339.7	362.7	352.8	357.5	370.3
To other private creditors	40.4	58.4	67.0	78.4	79.2	80.9	84.0
Value of debt service payments	102.6	144.7	150.1	157.6	171.3	182.7	185.2
Interest payments	51.3	81.4	77.0	72.0	83.3	97.7	97.8
Amortization payments[c]	51.3	63.3	73.1	85.6	88.0	85.0	87.4
Ratio of external debt to exports of goods and services	81.8	150.8	170.8	158.7	141.9	132.1	126.6
Ratio of debt to GNP	24.3	36.0	38.1	37.7	35.6	33.7	32.3
Ratio of debt service[d] to exports	13.0	21.3	23.0	20.3	19.6	18.9	17.5
Ratio of interest payments to exports	6.6	12.0	11.8	9.3	9.5	10.1	9.3

[a]By an official agency of the debtor country.
[b]Covers only public and publicly guaranteed debt.
[c]Excludes debt owed to the Fund.
[d]Includes all unguaranteed debt on the presumption that this is owed mainly to private creditors.

SOURCE: *World Economic Outlook*, International Monetary Fund (April 1989).

The non-oil-producing developing countries did not offer the type of investment opportunities that the major oil-exporting countries sought. Most of the surplus funds during this time were generated by a small number of Middle Eastern countries with sparse populations, such as Saudi Arabia and Kuwait, that were unable to increase their merchandise imports in proportion to the growth in revenue from their oil exports.[2] The IMF estimated that the major oil-exporting countries generated cash surpluses of approximately $475 billion from 1973 through 1981. A significant percentage of the cash surpluses was placed in U.S. and western European banks in the form of bank accounts

2. Kuwait, Iraq, the Libyan Arab Jamahirija, Qataer, Saudi Arabia, and the United Arab Emirates have had surpluses since 1970.

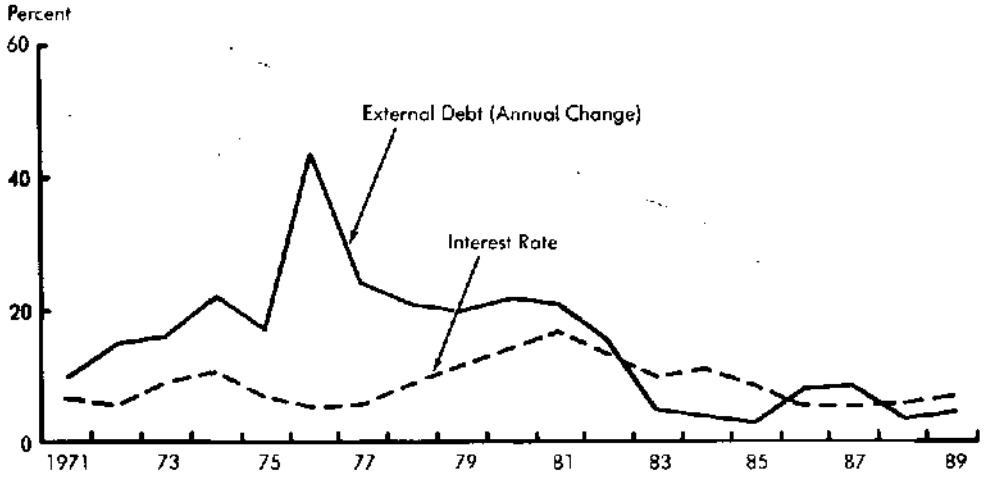
and other short term investments. U.S. banks were major recipients of those short-term deposits through their home offices and offshore branches.

Banks receiving large deposits from the major oil-exporting countries needed and sought customers willing to borrow. The developing countries were eager customers because they needed funds to finance the continually increasing costs of importing oil. They also needed funds to finance their often ambitious economic development programs. Many of the developing countries' economies were experiencing solid growth in the 1970s, and the banks were willing to provide loans to them.

The pace of borrowing by developing countries increased rapidly in 1979 because of the new round of oil-price increases caused by the Iranian hostage crisis and surging inflation. Between 1979 and 1982, the long-term external debt of developing countries increased by 52 percent. It rose another 57 percent by 1990. The cost of servicing the external debt became an ever-increasing problem. As interest rates on new loans rose to record levels, the average interest rate on total outstanding debt of developing countries increased significantly (see Figure 14-1). Their debt service ratio (interest and amortization payments as a percentage of exports of goods and services) rose to more than 20 percent.

FIGURE 14-1

Growth in Total Debt and Interest Rates of Developing Countries 1971–1989[a]



[a]U.S. dollar values of total short- and long-term external debt and London interbank offered rate on 6-month U.S. dollar deposits.

SOURCE: *World Economic Outlook* (October 1989).

Accumulation of short-term debt to meet interest payments was adding still more to the debt burden. In a few countries, the burden was increasing much more than average.[3]

The larger developing countries, such as Brazil and Argentina, had been borrowing heavily in order to diversify their economic bases. Historically, developing countries have depended on exports of raw material to finance imports of manufactured products from the industrialized nations. The world-wide recession that began in 1980 and lasted through 1982 had a major impact on the demand for their raw materials. Demand from the industrialized countries fell as their output of manufactured goods declined. Therefore, the developing countries' volume of exports also declined substantially and, in an effort to maintain sales, these nations rapidly reduced prices for raw materials. The decline in both quantities and prices of raw material exports causes the terms of trade[4] to worsen for the developing countries. The decline in commodity prices is shown in Figure 14-2. This forced the developing countries into even more borrowing to finance their current account deficits, including interest payments on their loans.

Under these conditions the banks in the industrial countries became more concerned about the ability of the developing countries to repay their large external debts. Banks offered fewer long-term, fixed-interest loans. As a result, developing countries were forced to borrow short-term money with floating interest rates based on either the prime or federal-funds rates in the United States or the London Interbank Offer Rate (LIBOR). These rates climbed steeply in the early 1980s (see Figure 14-3), creating an even greater strain on the developing countries' balances of payments and their ability to meet loan and interest payments.

BORROWING COUNTRIES

Although estimates of the developing countries' total amount of external debt vary, the estimated amount (see Figure 14-1) was $1.3 trillion by 1990. The developing nations are continually negotiating with private banks and public institutions for new loans. Although the rate of new loan creation has declined since 1983, the need for external sources of funds is expected to remain large into the foreseeable future. According to the IMF, Table 14-2 shows the 11 countries owing the largest external debt.

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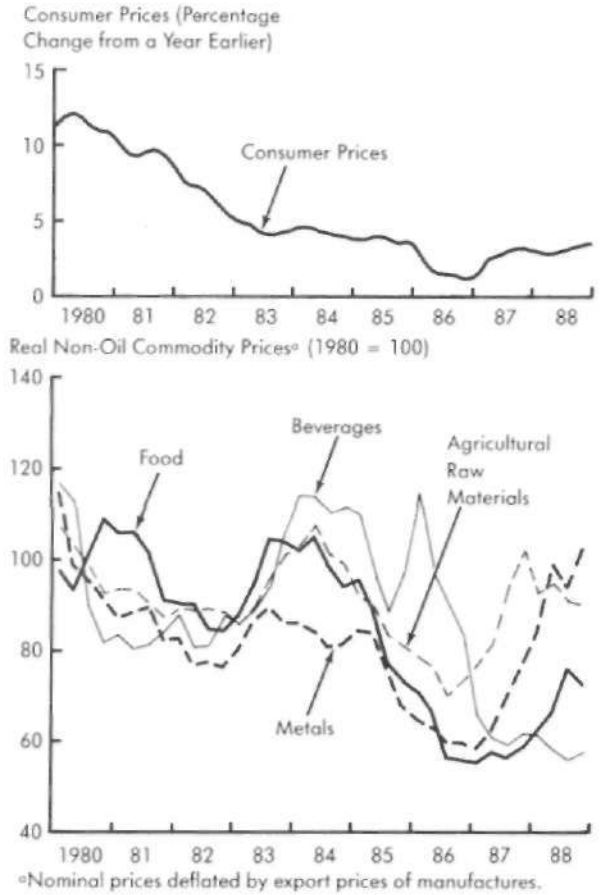
3. "External Debt—The Continuing Problem," *Finance & Development*, International Monetary Fund (March 1983) p. 22.
4. *Terms of trade* refers to the price a country pays foreigners for import goods compared to the price it charges foreigners for its export goods. Sometimes it is expressed as an exchange rate between imports and exports.

Most of the developing countries appear to be capable of servicing their external debt. Those nations that avoided high rates of inflation by pursuing prudent fiscal and monetary policies are not facing severe problems. South Korea, Taiwan, and other Asian nations have been most successful in restraining domestic demand and holding down prices of their exports. They have been able to maintain their market share of exports to other nations and were poised to resume high rates of real growth in 1983, when recovery began from the worldwide recession of the early 1980s.

FIGURE 14-2

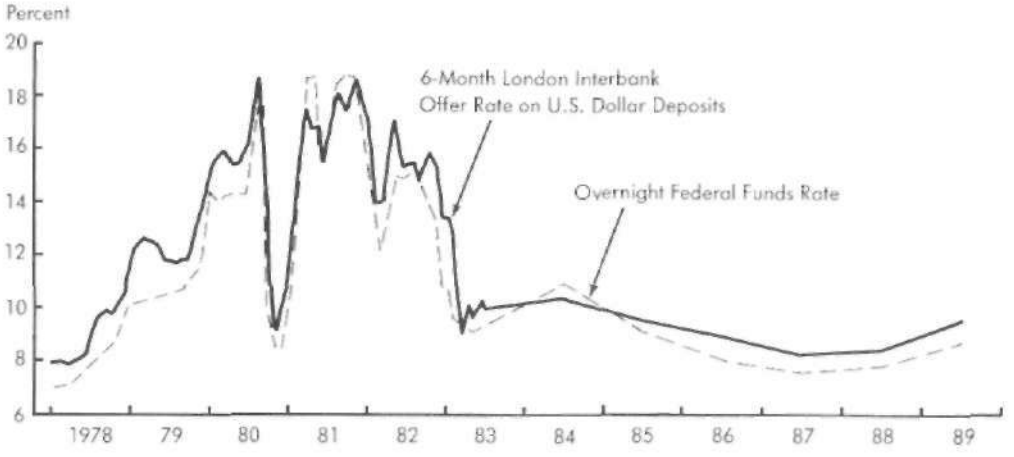
Inflation Indicators in Major Industrial Countries, 1980–1988



SOURCE: *World Development Report* (October 1989).

FIGURE 14-3

LIBOR and Federal-Funds Rates



SOURCE: *International Financial Statistics* (April 1989).

Unfortunately, not all countries managed to restrain growth in their domestic demand. Some have permitted rapid growth in their money supplies and expansionary fiscal policies to meet that demand. The result has been a deterioration in their competitive positions in the export market even while their import demand remained strong. Many of these nations resorted to extremely restrictive import policies accompanied by devaluations of their currencies.

TABLE 14-2

Major Third World Debtors, 1985
(In billions of U.S. dollars)

Country	Amount	Country	Amount
Brazil	$104.4	Nigeria	$31.0
Mexico	96.3	Chile	19.9
Argentina	48.6	Yugoslavia	19.0
Venezuela	34.9	Peru	13.4
Indonesia	32.5	Ecuador	7.6
Philippines	32.5		

SOURCE: Institute of International Finance (1985) and Morgan Guaranty Trust Company (1985) using IMF data.

The countries with the largest external debt and rapid inflation are concentrated in the Western Hemisphere. For example, two of the largest debtors, Brazil, and Argentina, have had inflation rates in excess of 200 percent in some recent years. The external debts of the Latin American and Caribbean nations total $330 billion. Of that, two-thirds is owed to international commercial banks. The remainder is owed to various public financial institutions.

Brazil and Mexico have been the largest borrowers. Both nations have large and rapidly growing populations. Each nation has been attempting to diversify its economic base by developing a manufacturing sector and exploiting natural resources more effectively. Domestic inflation and the unexpectedly deep and extended worldwide recession wreaked havoc with their developmental goals, while creating especially acute problems for their many foreign creditors.

The estimated private, external debt of Mexico, Brazil, and Argentina totals approximately $250 billion. All three countries have negotiated, or are currently negotiating, restructured programs both with private commercial banks and the IMF in order to delay principal repayment and to acquire additional borrowed funds. The agreements have involved commitments to reduce imports, lower domestic rates of inflation, and promote export sales in an effort to generate more foreign exchange.

SOURCES OF LOANABLE FUNDS

As indicated, the external borrowing of the developing countries currently exceeds $1.3 trillion. Lenders of the external debt are divided rather equally between government and international financial institutions and privately owned commercial banks. The distribution of public and private borrowing among the developing countries has been quite uneven. The large nations in the Western Hemisphere and other rapidly industrializing countries such as South Korea have relied heavily upon private banks for most of their funds.

The smaller developing countries have relied more heavily upon governments and public financial institutions, especially the International Monetary Fund and the World Bank Group, for their external borrowing. Domestic demand management through restrictive monetary and fiscal policies often is a requirement for loans from those institutions. These constraints may have resulted in better financial management and less ambitious growth plans on the part of the borrowing countries. As a result, they may be in a better position to manage their external debt without having to resort to the emergency measures facing some of the larger developing countries.

Commercial Banks

The large European and United States banks were the major recipients of surplus funds ("petrodollars") poured into the multinational financial markets by the OPEC countries. Competition for profitable investments by the banks offered exceptional borrowing opportunities for those developing countries believed to have the best growth potential. The developing countries found banks eager to provide long-term loans at fixed rates of interest, and short-term loans at flexible rates of interest tied to the U.S. prime rate, federal-funds rate, or LIBOR rate. Additionally, nonbanking multinational businesses, particularly manufacturers, were continually attempting to expand their operations in developing countries. The result at that time was an excellent borrowing environment for countries whose growth potential was considered to be good.

Although most nations felt the impact of the worldwide recession of 1980–1982, the current crisis facing nations with a large external debt, as well as the financial institutions that are their creditors, is fairly narrow in scope. The borrowing countries that are most heavily in debt still have great potential for economic development, albeit at a slower pace than the ambitious plans of the 1970s. The banks holding the debt have significant resources at their disposal that will permit them to restructure outstanding loans and to provide additional lending in future years. (Table 14-3 shows the Latin American debt holding of some major U.S. banks as of 1988.)

International Institutions

Although the IMF and the World Bank (also known as the International Bank for Reconstruction and Development) played relatively modest roles in the

TABLE 14-3

U.S. Bank Loans to Debt Troubled Countries
December 31, 1988
(In billions of U.S. dollars)

	Loans	Nonperforming Loans
Citibank	$9.5	8.3%
Bank of America	8.0	5.7
Chase Manhattan Bank	6.7	7.3
Manufacturers Hanover Trust Company	7.1	1.4
Morgan Guaranty Trust Company	5.5	3.7
Chemical Bank	5.0	2.8
Bankers Trust Company	3.3	2.1

SOURCE: *The Wall Street Journal* (March 16,1989).

total lending to developing countries from 1973 through 1982, governments and financial institutions subsequently encouraged both institutions to play an expanded role in the unsettled environment. At present, official international financial institutions provide 18 percent of the external debt of the developing countries.

IMF is not a lender of last resort, for it has only limited funds obtained through country contributions. By itself it cannot create either national or international currencies. Likewise, the World Bank has only its contributions plus what is raised through bond issues.

In mid-1983 it was proposed that IMF members increase their contributions to give the fund more lending power to help out developing nations. Congressional approval was required before the United States could increase its contribution. The additional contribution from the United States, which is the largest IMF contributor, was to be $8.5 billion. After weeks of Congressional debate, in which some members claimed the move was tantamount to a bailout of commercial banks, Congress, in November 1983, finally passed a bill approving the additional contribution.

The Reagan Administration's official position in supporting the bill was stated by U.S. Deputy Secretary of the Treasury R.T. McNamara. He outlined the Administration's strategy for dealing with the next phase of the international debt problem. The strategy included five elements:[5]

1. Governments of industrial nations should adopt policies to sustain non-inflationary economic growth.
2. Developing countries should follow sound economic policies and live within their means.
3. The IMF should be further strengthened.
4. Continued commercial bank lending must be encouraged.
5. Bridge (temporary) financing should be available.

Official international financial institutions such as the Bank of International Settlements (BIS) have consistently made their lending contingent upon the borrowing country's willingness to accept advice concerning domestic macroeconomic policies, often including austerity measures. While the suggested programs have not been universally successful in helping borrowing countries avoid excessive inflation and repayment problems, the success rate has been impressive. On the other hand, in those countries receiving most of their externally borrowed funds from private institutions there appears to have been an overly optimistic sense of ability to repay.

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5. Scott Pardee, "Prospects for LDC Debt and the Dollar," *Economic Review*, Federal Reserve Bank of Kansas (January 1984).

THE CURRENT PROBLEM

The often-mentioned crisis facing developing countries experiencing ever greater difficulty servicing their external debts is potentially a crisis for all nations and both public international and private financial institutions. Few debtor nations have really severe problems, and the private financial institutions involved compose a relatively small group. Nevertheless, an international credit collapse that initially involved only a few of the debtor nations and creditor institutions could have a catastrophic domino impact upon the world community. The implications of a financial collapse are so great that representatives of the industrial countries, international financial institutions, private banks, debtor nations, and the major oil-exporting countries are coordinating their efforts to find solutions to the problem.

The current crisis has its roots in a variety of factors. The most important cause appears to be the depth and duration of the worldwide recession of 1980–1982. Most developing countries were slow to recover from that recession, which caused the demand for imports to decline in the industrial countries. The impact of that decline was dramatic on the exports of the developing countries, both oil-producing and non-oil-producing, whose balances of payments deteriorated rapidly because of reduced exports and increasingly expensive imports.

In October 1979, the Federal Reserve Board announced a monetary policy designed to control the rate of growth of the U.S. monetary supply. As a result, interest rates rose rapidly in the U.S., and higher rates quickly spread to other money markets throughout the world, especially the "Eurodollar" market, where the developing countries were heavy borrowers. Because many of the short-term loans were tied to the U.S. prime interest rate and the British LIBOR rate, the debt-servicing burden of loans rose rapidly. The major oil-exporting nations were the principal source of funds in the Eurodollar market. These nations had less available cash because reduced oil production and lower per-barrel prices resulted in smaller surpluses in their balances of payments. Therefore, the reduced flow of funds into the Eurodollar market put further pressure upon the already high rates of interest.

The inflationary expansion of the 1970s had lulled many bankers and government leaders into a false sense of security. The non-oil-producing developing countries suddenly found themselves facing a credit crunch. Countries with especially high rates of inflation found external borrowing much more difficult as private financial institutions changed from long-term lending with fixed interest rates to short-term lending at variable rates of interest.

Worsening balances of trade and increasing burdens of external debt forced the developing countries into a variety of restrictive actions. The actions included measures to reduce imports via quotas and outright bans on many items via exchange controls and currency devaluations. Negotiations with

private and public financial institutions were initiated for the purpose of rescheduling the external debt. Moreover, borrowing to meet interest payments became more widespread.

Rescheduling of Loans

Rescheduling external debt may be an adequate solution for many of the debtor nations if their problem is primarily associated with the depth and duration of the worldwide recession. If the economic recovery in the United States is sustained and the value of the dollar remains high relative to other countries' currencies, the demand for imported goods from the developing countries will increase. Economic prosperity in the United States will eventually cause prices to rise for the raw materials and other products exported by the developing countries. The process of economic recovery and expanded exports, however, would not be limited to economic activity in the United States. The return to prosperity would be expected to occur throughout the industrialized world, further stimulating the exports from the developing nations.

Higher prices for, and increased volume of, exports will improve the balances of payments of the developing countries. The improved balances of payments will provide them with the necessary foreign exchange to service their external debt, especially if the debt is spread over several years, and the interest rates are fixed at levels that are more consistent with long-term historical rates than with the extremely high rates that prevailed in the early 1980s.

Although the IMF and the Federal Reserve urged banks to reschedule loans and adjust interest rates, many banks were reluctant to do so for fear of establishing a precedent. But the banks were in a bind and did not want their loans to go into default. As a result, they began offering new loans with up-front loading, which permitted borrowers to draw down large portions of the new loan in early stages of the new loan period. Banks hoped borrowers would use the new loan money to pay off interest payments on old loans that were in arrears, thereby making it unnecessary for the banks to write off previous loans. Even the noncollection of interest for 90 days forces a bank to declare a loan as nonaccrual, or nonperforming, and causes the bank to write down its profits.[6]

Since 1973, more than thirty different developing countries have rescheduled their external debt. The amounts were small until 1983, when $21.5 billion was rescheduled. Since then, over $30 billion has been rescheduled annually. Table 14-4 gives a clear picture of increasing loan-rescheduling activity during the 1980s. Other sources indicate that over the period of 1983–1985, 31

6. When a bank puts a loan in the nonaccrual category, the bank does not record the interest due as income and subtracts from the current profit any previous interest that was recorded but not collected.

TABLE 14-4

Rescheduled Debt Service of
Capital Importing Developing Countries, 1980–1987
(In billions of U.S. dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Total	4.7	2.0	6.8	21.5	36.8	31.6	31.7	32.9
Africa	0.8	1.4	0.4	2.7	4.2	4.5	4.1	2.2
Europe	3.0	0.1	1.8	2.5	1.8	2.0	1.4	1.3
Western Hemisphere	0.9	0.5	4.4	16.3	30.6	23.0	23.0	27.2

SOURCE: *World Economic Outlook* (April 1988).

countries approached banks for new financial arrangements affecting $140 billion of debt.[7]

Moreover, in mid-1983 a group of smaller Latin American countries, including Ecuador, Uruguay, and Bolivia, were discussing the feasibility of forming a "debtors' cartel" in the hope of obtaining more generous repayment terms from their foreign leaders. Actual or de facto repudiation of external debt may be a possible solution. In June 1984, officials of seven nations—Brazil, Mexico, Argentina, Colombia, Venezuela, Peru, and Ecuador— accounting for 80 percent of Latin America's foreign debt met to discuss solutions to the region's debt problems.

The hypothesis that economic recovery, lower interest rates, and rescheduled external debt will eliminate the crisis has a considerable amount of merit. It would reinforce the position of many analysts that bankers did not act imprudently as they recycled the flow of petrodollars through the 1970s and early 1980s.

Rescheduling Loans May Not Be the Solution

There are those who doubt that the external debt of at least some of the developing countries is manageable under any circumstances. They argue that sovereign debt cannot be analyzed in the same way as private company debt. Governments and government-owned companies are not motivated to restrict costs and stimulate revenues in order to generate profits from which external debt can be serviced.

Brazil and Argentina are often cited by some international bankers as debtor nations that may not be capable of ever paying their foreign creditors. They point out that their governments have created extremely high rates of domestic inflation by continually increasing their money supplies in order to

7. *World Economic Outlook* (1986) p. 92.

finance their many government programs and to support government-owned industries. Many years of inflation and expanded welfare programs designed to placate populations that might otherwise have been extremely resistant to unpopular military governments created a situation that by the early 1980s made it impossible to service their external debt. There were some critics who took the position that these countries did not have any intention of every repaying their foreign debts. Perhaps the bank officers responsible for lending to these countries recognized that conditions were such that the loans could not be repaid. Yet banks continued to lend because the loans provided high interest earnings and an outlet for their large holdings of petrodollars.

To the extent that borrowed funds were used for current consumption, the borrowing countries did not create producing assets that would allow them to earn the foreign exchange needed to pay the interest and principal on the external debt. In such circumstances the accepted formula for servicing the debt would be to greatly reduce inflation through restrictive monetary and fiscal policies that would reduce domestic consumption in order to free resources for export. In addition, debtor nations would have to deeply devaluate their currencies in order to make their products competitive on the world markets.

Such draconian measures may be politically impossible in either Brazil or Argentina. By the late 1980s, the IMF had not succeeded in getting either nation to accept its suggested reforms as a condition for new loans. Brazil's and Argentina's inflation rates both continued to exceed 100 percent per year. Some Latin American countries, including the Dominican Republic and Peru, are facing economic turmoil and social unrest from attempts to implement the economic sanctions required for IMF loans.

Should Banks Write Off Loans? A solution to the current debt might be to force the lending banks to write down or write off their loans inasmuch as they appear to be uncollectible. In this way bank officers and stockholders would have to take direct responsibility for their decisions to lend to debtors who were unwilling to manage their external debt in ways that ensured their continued credit worthiness.

Even if the lending banks are forced to absorb the losses associated with writing off those huge debts, the borrowing countries would not be relieved of any responsibility for domestic policies that contributed to the situation. The countries' credit ratings would be so poor that they could not borrow abroad until they had demonstrated to the rest of the world that they could manage their affairs in ways that would lead to future solvency. Eliminating excessive inflation and creating a domestic economy that could sustain growth with a low level of unemployment might span an entire generation.

There are many people, including some bankers and politicians, who find such solutions to dealing with the external debt of the developing countries to be unacceptable, even though they may accept the validity of the position that some of the debtor nations will never be able to pay off the debt. Critics argue

that the international political and economic environment makes such a solution unthinkable.

It is possible that the process of absorbing the losses associated with writing off the huge debts might force one or more of the world's large banks into bankruptcy. A single bankruptcy could have a domino effect that would spread quickly to many other banks. Any semblance of international monetary order would collapse and worldwide depression might result, with its attendant economic miseries and the likelihood of military confrontations that could spread into a destructive world war.

Should Central Banks Absorb Loans? A suggested alternative to forcing the private banks to write off many of their loans to developing countries is for the central banks of the countries in which the commercial banks are located to purchase the potentially bad debts and absorb the losses. Obviously the central banks could choose to purchase all or any portion of the questionable debt of the commercial banks. The amount purchased might be made dependent on the solvency problems of the individual banks.

To the extent that the central bank purchases the debts of the developing nations from the lending banks, the citizens of the nation in which the central bank is located must share the burden created by the imprudent lending policies of that nation's commercial bankers. The burden placed upon the citizens of the developed nations would probably manifest itself in the form of (1) higher rates of inflation because of an increase in the money supply; (2) a transfer of purchasing power to the nations whose debt is forgiven; (3) a subsidy, in the form of interest on the deposits that formed the basis of the loans to the OPEC countries; or (4) some combination of 1, 2, and 3.

Some Near Crises

After close scrapes by Mexico and Brazil to meet their interest payments in late 1983, it appeared that Argentina would be unable to meet its $500 million interest payment due December 31, 1983. Fortunately, after weeks of discussion and manipulation involving its Latin American neighbors, numerous commercial banks, the IMF, and the United States Treasury, an eleventh-hour aid package was agreed to on Saturday, March 31, 1984, avoiding the pending crisis. The aid permitted Argentina to meet its late interest payments and averted write-offs by the commercial banks.

Mexico and Venezuela, although both heavily in debt, each loaned Argentina $100 million. Brazil and Colombia, also big debtors, each contributed $50 million to the aid package. A consortium of eleven U.S. and British banks loaned a total of $100 million. This $400 million along with $100 million from Argentina's foreign reserves gave it the needed $500 million. The United States, in turn, agreed to exchange $300 million U.S. dollars for an equivalent amount of Argentine pesos so Argentina could pay off its loans from the four

Latin American countries. The United States was repaid when Argentina obtained a pending loan from the IMF.

In order to obtain the IMF loan, however, Argentina agreed to curb its sky-high inflation, which was 400 percent in 1983. It agreed also to reduce its budget deficit, cut government spending, and take other austerity measures. These measures, limiting the growth of money supply and restraining wage increases, were unpopular with some government officials, labor leaders, and the general public.

Fortunately, the rescue package averted the Argentine debt crisis. In addition to the IMF, 11 international banks and numerous other banks rescheduled their loans to the country and extended new loans. Argentina was also able to pay past-due interest. Since then Argentina has kept up with interest payments and met some principal payments.

After several months, however, it was apparent that the IMF plan of gradualism and austerity, accepted as part of the loan agreement, was ineffective in combatting inflation, which was soaring at an annual rate of 2,000–3,000 percent. Hoping to remove the inflation mentality of its citizens and stem hyperinflation, Argentina, with IMF approval, adopted a bold new economic plan in 1985. First Argentina created a new currency called the "austral" by lopping three zeros off the peso. Then, the country froze prices, wages, and official exchange rates. It also promised to stop printing money and agreed to reduce government spending and balance the budget. The austral plan, as it is known, called for de-indexing wage and other contracts and sought to privatize some of the 350 state-owned and/or operated companies. Within a year, the plan succeeded in reducing inflation to a double-digit level, and strides were being made with the other goals. But in mid-1989 the new President of Argentina, Carlos Menem, stated that a significant reduction in principal and interest is the only way to solve the debt problem. In the fall of 1989, he suggested that creditor banks forgive one-half of Argentina's $64 billion foreign debt.

In 1986, Brazil adopted a similar plan to combat its rapid inflation. It created a new currency, the "cruzado," worth 1,000 cruzieros (the previous monetary unit), instituted wage-price controls and abandoned automatic inflation-adjustment measures. In that same year Brazil and its 700 creditor banks agreed on a package to restructure and reduce interest rates of $31 billion on its external debt. Early in 1987, the cruzado plan was acclaimed a success by the Brazilians, but not by others.

PROPOSALS TO EASE THIRD WORLD DEBT PROBLEMS

In July 1985, the so-called Cartagena group, composed of 11 Latin American nations, met in Mexico to discuss ways of easing the problem of external debt.

Suggestions included more new loans, capitalization of interest payments by adding them to existing loans, and reduction of interest rates.

The Baker Plan

In the fall of 1985, at a joint meeting of the IMF and the World Bank in Seoul, Korea, U.S. Treasury Secretary Baker proposed a three-point program to ease the world's debt problems. The Baker Plan proposed the following:

- Debtor nations would begin making serious policy changes to promote long-term growth in their economies. Changes would include steps to attract more foreign investment, reduce trade restrictions, and transfer costly state-run industries to the private sector.
- At the same time, partly as an incentive, commercial banks would pledge in advance to provide debtor countries with up to $20–25 billions in new loans over the next three years.
- The World Bank and the Inter-American Development Bank would assume broader roles in reinforcing the IMF in overseeing the debtor nations' policies and guaranteeing new bank loans to help to borrowers attract more money.

At the same time, Brazil, the Third World's largest borrower, was seeking relief from some of the IMF austerity measures previously imposed on it and threatening to trim its interest payments. (In early 1987, Brazil stopped paying on its loans.) About this same time Peru, under its new president, Alan Garcia, announced among other measures that it would limit interest payments on its $14 billion external debt to 10 percent of its export income. At the time Peru was $500 million in arrears on interest payments. Garcia stressed, as have other Latin American leaders, that domestic economic development has to come before debt repayments can be made. Later Peru unilaterally reduced the interest rate that it would pay on its existing loans. Subsequently, federal banking regulators required U.S. banks with loans to Peru to set aside special reserves on their Peruvian loans.

In early 1986, Bolivia's loans were considered to be nearly worthless. As of 1985, Bolivia's price index had risen more than 8,000 percent, and the country had not made a payment on its $833 million debt to private banks in two years. In the spring of 1986, with its hyperinflation then running at a rate of more than 26,000 percent annually, one of the highest in world history, it took a two-inch stack of paper money to buy a chocolate bar. Unable to collect sufficient taxes to keep up with the rapid growth of government spending, Bolivia was running the presses daily and printing one-, five-, and ten-million peso notes, in a move reminiscent of post-World-War-I Germany, when nearly worthless paper money was used by some for wall paper. Consequently, Bolivia took drastic steps to stop inflation. It lifted controls on prices, interest

rates, imports and exports; it freed the official exchange rate and devalued its currency by about 93 percent; stopped printing new money; cut government spending; froze public sector wages; and eliminated many government jobs. As a result of Bolivia's success, the IMF signed an agreement that helped reopen the country's credit lines with the World Bank and reschedule its debt. Moreover, Bolivia planned to reopen talks with its private bank lenders in late summer of 1986. It closed down or privatized many state-owned enterprises. Although the country continued in its depressionary condition, it stabilized its currency at 1.9 million to the U.S. dollar. By mid-1986, it had cut its inflation rate to 20 percent and had plans to replace the peso early in 1987 with the "condor" worth one million pesos.

In 1986, new trouble developed in Mexico, which had averted an earlier crises in 1982. The steep decline in oil prices, on which Mexico relied heavily for export earnings and debt payments, the decline in the value of the peso, a flight of capital, and an expected 4-percent decline in real GNP for 1986 left the country in a financial squeeze. It was evident that Mexico would be unable to meet its mid-year debt obligations. Fearing that Mexico might follow the Peruvian approach of unilaterally reducing interest payments, or even defaulting on its loans, U.S. officials began working with Mexican authorities and others to seek a solution.

Mexico suggested loan restructuring, lower interest rates, modification of IMF austerity requirements, new commercial bank loans, and linkage of interest payments to oil prices. Mexico indicated it would need $15 billion in new loans and interest-rate concessions over the next three years in order to bring about economic recovery in 1987 and 1988, by which time the country would be in a position to meet its debt obligations.

After several months of talks involving the IMF, U.S. officials, and others, a $12.2 billion international package was agreed upon. It included an IMF loan of $1.6 billion, with less austere terms to permit domestic growth, a World Bank loan of $1.9 billion to be used primarily for domestic development, an Inter-American Bank loan of $400 million, International export credits of $1.5 billion, U.S. farm credits of $800 million, and a recommended $6.0 billion in commercial bank loans to be subsequently negotiated.

In exchange for the loan package, Mexico agreed to reduce its budget deficit, tighten monetary policy, forestall the flight of capital, keep interest rates higher than inflation, and broaden its tax base. It also agreed to modernize, merge, or privatize 300 of its 500 state-owned corporations. As a further concession it agreed to liberalize import restrictions and actively recruit more foreign capital and investments.

By requiring financial reform by the debtor nation, pledges of loans by commercial banks, and involvement of the World Bank and the Inter-American Development Bank as well as the IMF, the Mexican agreement appeared to follow the Baker plan. By early 1987, however, some disagreement still existed among commercial banks, both U.S. and foreign, that were expected

to provide Mexico with $6 billion in new loans. Several of them thought their contribution amounted to too much of the total package. Others were upset that certain banks were to receive payments on loan principal, and practically all of them disagreed with the idea of interest-rate concessions, including a rebate of some 1986 interest payments asked by Mexico.

Another jolt regarding developing-country debt occurred in February 1987, when Brazil suspended interest payments on $67 billion of its foreign bank debt. This forced some large U.S. banks to place certain of their Brazilian loans on a non-accrual status, thereby reducing first-quarter profits.

Although the Baker plan seemed to have worldwide support, late in 1986 U.S. Senator Bill Bradley criticized that it was ineffective and would not solve Third World debt problems. He declared it to be equivalent to throwing good money after bad. Consequently, he introduced a federal bill calling for U.S. and other creditors to forgive 9 percent of Third World debt and reduce interest rates on the remainder by three percentage points. He hoped the bill would be scheduled for Congressional hearings early in 1987. In the meantime he suggested that President Reagan call an international summit to discuss his and other proposals for solving Third World debt problems. By 1990, nothing specific had materialized from the Bradley bill.

Debt to Equity Swaps

One of the other proposals to ease world debt problems involves the switching of debt to equity. In this procedure, a commercial bank holding Third World debt sells some of the loans (through a brokerage firm) to a private investor at a discount. The buyer then presents the loan to the original borrower nation for repayment. The borrower pays off the loan in its own currency, rather than in U.S. dollars. The buyer of the loan then invests the money in its subsidiary or some other firm in that country. In this manner, the original borrower nation reduces some of its debt obligation, the lending bank gets some of its money back, the broker earns a fee, and the private investor has a politically acceptable way of making an investment in a Third World country.

More than $2 billion in debt was swapped in this fashion in 1986; another $5 billion was swapped in 1987. For example, in 1986 Chrysler Corporation pumped $100 million into its Mexican subsidiary using money obtained through the purchase of a Mexican loan at a 56-percent discount. One brokerage firm estimates that swaps could reach $50 billion annually in five to ten years, as the process becomes more acceptable.

This process continued into the 1990s. For example, in late 1988, Manufacturers Hanover Trust Co., a holder of nearly $2 billion in loans to Brazil, sold $115 million worth of risky Brazilian government bonds to the Brazilian central bank for $100 million worth of cruzados. It then invested the crudazos in a Brazilian forest-products company. A number of other U.S. and Japanese banks, such as Citibank, Morgan Guaranty and the Bank of Tokyo, have done

likewise. In these arrangements the creditor not only gives a large discount on its loan but assumes a risk on its new investment. Often, the creditor bank becomes involved with a company and with management practices with which the bank has little or no expertise.

A creditor may also accept a new bond in payment for existing debt. These "exit bonds" may cover either the face value or a discounted value of the debt. They usually are long-term, fixed-rate, lower-interest-rate bonds. At least they relieve the creditor bank from making additional loans to the debtor to meet its interest payments or repay existing loans.

Some creditors do not even bother with swaps or exit bonds. Instead, they simply sell the existing debt to the original debtor, or others, at a discount. Bolivia, for example, recently agreed to buy back half of its $670 million foreign bank debts at 11 cents on the dollar. Subsequently, Chile was scheduled to purchase $500 million of its debt at 60 cents on the dollar.

One reason creditor banks may agree to swaps, exit bonds, or selling their loans at a discount is that they can take a tax write off against their profits. This, of course, reduces their income taxes, but deprives the U.S. government of revenue it might otherwise receive. Moreover, it causes the federal government to borrow more to meet its obligations. Therefore, this practice passes the loss to some extent to other taxpayers, either now or in the future.

In the past few years a secondary market in which banks, institutions, and others buy and sell foreign debt has developed. Figure 14-4 and Table 14-5 show the deterioration in the value of this debt in recent years. Figure 14-4 depicts the average decline in the credit worthiness of 15 heavily indebted countries. Table 14-5 shows the decline in market prices for various Latin American developing country loans.

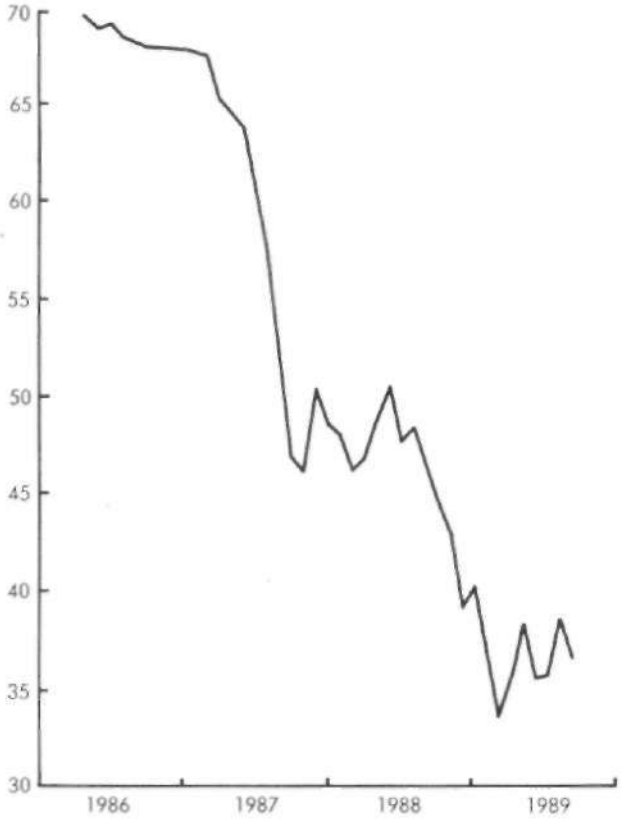
The Brady Plan

In the spring of 1989 the new U.S. Secretary of the Treasury, Nicholas Brady, presented to the Group of Seven nations the Bush Administration's plan for easing and reducing the Third World debt. Instead of requiring continuous lending, as did the Baker Plan, the Brady Plan called for banks to reduce or write off some Third World debts in exchange for financial incentives from the World Bank, the IMF, and Japan. In the then current negotiations on Mexican debt, for example, the Administration suggested that 20 percent of Mexico's $54 billion in foreign bank debt be forgiven or written off. In exchange, the banks would receive $6 billion of credit enhancements from the international agencies and Japan. In exchange for Japan's involvement in the plan, it expected greater participation in the IMF.

In the meantime, a federal regulator, the U.S. Interagency Country Exposure Review Committee (ICERC), required several major U.S. banks to write off or set aside reserves equal to 20 percent of the banks' loans to

FIGURE 14-4

Secondary Market Prices for Loans of Developing Countries, 1986–1989
(In percent of face value)[a]



[a]Weighted average prices for 15 heavily indebted countries, where weights are Fund staff estimates of unguaranteed outstanding commercial bank debt at end-1986, adjusted for maturing short-term debt.

SOURCE: *World Economic Outlook* (October 1989).

Argentina. Comprising officials from the Federal Reserve Board, the Comptroller's Office, and the Federal Deposit Insurance Corporation (FDIC), the ICERC declared loans to Argentina to be "value impaired" because that nation had not made interest payments for more than a year and was more than $3 billion in arrears.

TABLE 14-5

Market Prices for Developing-Country Debt
(Percent of face value)

Country	January 1987	July 1987	December 1987	July 1988
Argentina	62–65	46–49	35–38	22–25
Brazil	74–77	58–61	45–48	50–52
Chile	65–68	68–70	60–63	57–60
Colombia	—	81–83	67–72	60–65
Ecuador	63–66	45–47	34–38	23–27
Mexico	54–57	55–57	51–54	50–52
Peru	16–19	10–12	2–7	5–8
Venezuela	72–74	70–72	49–52	53–55

SOURCE: *Economic Review*, Federal Reserve Bank of Kansas City (July–August 1988).

New Accord for Mexico

In July 1989, Mexico reached an agreement with its major creditor banks in line with the Brady Plan. The agreement was developed by the White House with the aid of the Federal Reserve Board, the U.S. Treasury, and the State Department.

The accord offers creditor banks, who hold $54 billion of Mexico's medium- and long-term debt, three basic choices: (1) they can exchange their credit for new bonds carrying a lower interest rate of 6.25 percent, compared to the current floating interest rate of more than 10 percent; (2) they can accept a 35-percent reduction in the face value of their loans and keep floating interest rates on new bonds issued for the remaining amount; or (3) they can provide additional loans over the next four years.

The new bonds used in the first two options would be backed up by the U.S. Treasury securities and escrow accounts financed by the IMF, World Bank, and the government of Japan. Since the accord will take several months to implement, the Treasury, the Fed, and other monetary authorities will offer Mexico up to $2 billion in short-term loans.

Early indications suggested that about 60 percent of creditor banks will choose to exchange $32 billion of existing debt for new 6.25-percent bonds. Although the plan in total may not reduce Mexico's $100-billion-or-more foreign debt, it will provide an annual interest savings to Mexico of nearly $1.5 billion. It was hoped by the U.S. Treasury Department that the accord might serve as a model for pacts with Peru, the Philippines, and other nations falling behind on their interest payments.

CONCLUSION

From all indications, the problem of Third World or developing-country debt, especially that of Latin American countries, will be with us for some years. In the short run concerned nations have averted crises by rescheduling debts and arranging emergency loans from commercial banks, other nations, and international institutions. Quick fixes, such as those provided for Argentina, Mexico, and others averted turmoil but did not provide permanent solutions to their problems.

In 1987 several large U.S. banks set aside billions of dollars in reserves against their Third World loans, as the market value of these loans deteriorated. Between 1987 and 1989 more use was made of debt equity swaps. In 1989 Secretary of the Treasury Brady presented the Bush Administration's plan to the Group of Seven nations for reducing Third World debt. Also in 1989, federal regulators required several large U.S. banks to write off 20 percent of their loans to Argentina.

The long-run solution involves a continuation of worldwide economic recovery and growth, including economic expansion in debtor nations. The adoption of stringent monetary and fiscal policies, a return to price stability, and an increase in exports are essential for the developing countries. At the same time, lenders need to reschedule loans for longer terms, lower interest rates, and forgive some portion of the debts. Whether long-run measures can be implemented and take effect before a crisis of catastrophic proportions hits lenders and borrowers alike is a matter of conjecture.

QUESTIONS FOR DISCUSSION

1. Should developing countries be aided or left alone to work out their own loan problems?
2. Should the IMF increase its lending to developing countries to help them meet their loan commitments?
3. Should government agencies, commercial banks, and the IMF reschedule or restructure loans to developing countries?
4. Should interest rates on existing loans to developing countries be lowered?
5. What form of aid, if any, should be extended to developing countries?

6. Should the United States and other nations enhance the IMF's lending ability by increasing their contributions to the fund?
7. Should smaller developing nations with heavy external debt form a "debtors' cartel" for the purpose of bargaining with lenders?
8. Should commercial banks consider many of their problem loans to developing countries as uncollectable and write them off as losses?
9. Do you favor the Brady Plan as a solution to Third World debt problems?
10. Do you think swapping debt for equity is a viable solution for the Third World debt problem?

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15

THE POPULATION EXPLOSION
CAN THE WORLD FEED ITSELF?

Most of the chapters in this book have dealt with more or less specific problems that could be placed in the context of the United States economy and that had fairly clear-cut economic dimensions. As a result, most of the problems were appropriate for economic analysis. Even where several alternative solutions were presented, each solution could be understood in economic terms.

Such is not the case with the problem of population growth, which cuts across national boundaries, academic disciplines, and cultural and moral systems, and becomes more acute with the passage of time. As a result, it is virtually impossible to reduce the question of population solely to economic factors. Given the global character of the population question, it is necessary to widen our view somewhat in this chapter to include not just the United States economy but the world economy.

THE POPULATION EXPLOSION

The word *explosion* ordinarily describes a situation in which matter, under the impetus of some form of released energy, expands at an extremely rapid rate away from its center. When the word is used in connection with population

growth, it suggests rapid expansion of the world's population at a faster rate than occurred in earlier periods. Such is the case today. In 1989, the world's population expanded at an annual rate of 1.8 percent. Such a growth rate doubles the population in about 39 years. Some countries, notably those in South America and some sections of Asia, are growing at the rate of 3 percent per year, which would double their populations in just 23 years.

Table 15-1 presents estimates of world population for certain checkpoint years 1 A.D. through 1989 and indicates the number of years necessary to double the world population for those years. Population doubling time has dropped from about 1,650 in the year one to an estimated 39 years in 1989. The curve in Figure 15-1 portrays the historical growth in world population to date. Note that for much of humanity's recorded existence on earth, population growth has not been excessive. In fact, it has only been in the last 350 years or so that world population has increased at a rapid rate.

It is obvious from Table 15-1 and Figure 15-1 that the growth in world population has not been constant. Instead, the world rate of population growth has been increasing. It should be equally obvious that because of finite resources and spatial constraints, this trend cannot continue indefinitely. In the long run, growth rates in world population must take on the shape of the S-curve shown in Figure 15-2. This type of curve typifies the expected growth pattern for all living species. As the curve indicates, although population of a species first grows geometrically, it quickly levels off. This leveling reflects the fact that a living species cannot continue to grow exponentially because overcrowding brings population growth to a halt.

In other words, in an environment with finite resource limitations, there is a maximum ceiling for human population growth. It is for this reason that it is inevitable that world population growth eventually will conform to something approximating an S-shaped curve.

TABLE 15-1

Estimated Population of the World

Year (A.D.)	Population (Billions)	Number of Years to Double
1	0.25(?)	1,650(?)
1650	0.50	200
1850	1.1	80
1930	2.0	46
1989	5.2	39

SOURCE: Philip M. Hauser (ed.), *The Population Dilemma* (Englewood Cliffs, NJ: Prentice-Hall, 1963) p.10; and United Nations, *Demographic Yearbook* (New York, NY: United Nations, annually).

FIGURE 15-1

Historical World-Population Growth Curve

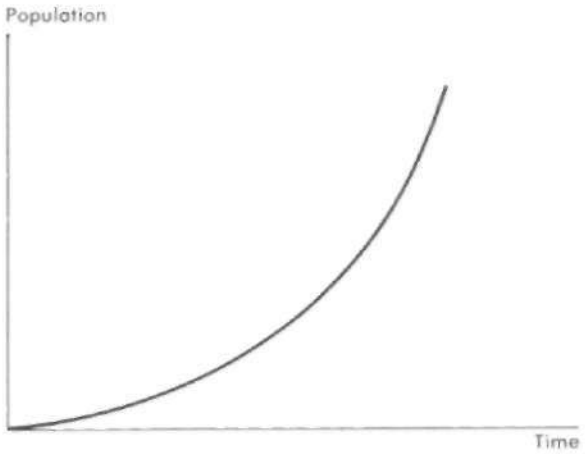
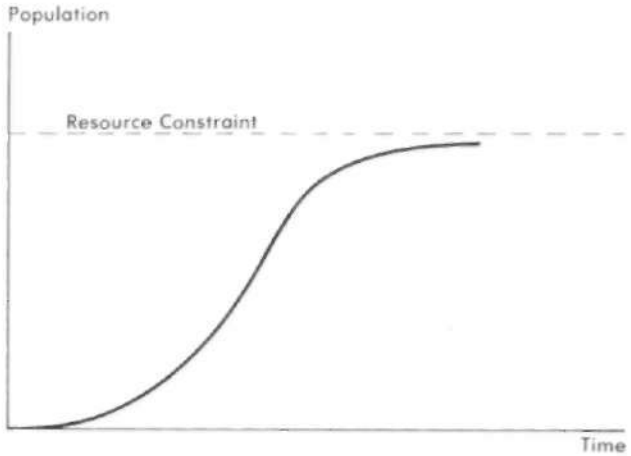


FIGURE 15-2

S-Shaped Population Growth Curve



The Resource Factor

Mere evidence of rapid population growth is not necessarily evidence of a problem, and vice versa. For example, in some nations—Canada, Australia, and New Zealand, to name a few—insufficient rates of population growth have seriously inhibited their economic growth. To draw any reasonable conclusions about rates of population growth, these rates must be related to other factors. Among the most important of these other factors are food, space, energy resources, and natural resources. Of these, food is most important. For that reason, the problem of population can be couched in terms of the available world food supply. Is the world supply of food currently sufficient to feed today's world population at the necessary minimal nutritional level? Is the rate of growth in the world's food supply greater than, or at least equal to, the rate of growth in world population? If the answer to either of these questions is no, then the problem of a "food gap" is very real.

The Problem of Distribution. Even affirmative answers to these two questions do not remove the problem of excess population completely. Probing a little deeper into the question, we might ask, assuming that the world's food supply is adequate to feed the world population, is this food supply distributed among the nations of the world in an equitable manner so that all peoples have access to an adequate diet? If the answer to this question is negative, then necessarily the populations of some countries—or at least segments of these populations—are existing on substandard diets, while other countries enjoy surplus food supplies.

People and Their Environment. In the final analysis the question of whether population is truly excessive, or whether current growth trends in population are too high or too low, can only be answered by examining the relationship between people and their environment. By *environment* we mean simply the sum total of all the available resources by which people seek to maintain themselves as a species. Since people exist in a finite (limited) environment, we must assume that there is some finite limit to the number of people the earth's environment can support at any given point in time.

All living organisms, plant and animal, *tend toward* a state of equilibrium with their environment. Ecological *equilibrium* implies a state in which the resources available to a given species are precisely equal to the amount of those resources necessary to maintain that species. A given species may or may not reach the equilibrium, depending on the changing character of the variables that determine the equilibrium state.

The Disturbance of Equilibrium

For most of its existence, humanity has lived in equilibrium with its environment. Only in very recent times (on the historical time scale) have humans

been able to circumvent this law. With the advent of the Industrial Revolution in the late eighteenth century, people began to drastically change their environment. They gained control of mechanical energy sources and broke the age-old dependence on animal or human energy. As a result, they were able to devote increasing amounts of time to devising ways to improve their own material welfare. Certainly the two most important developments affecting population growth that grew out of the Industrial Revolution were vastly improved agricultural methods and advances in medical knowledge. The first of these two developments gave rise to large increases in the available food supply. The second development gave rise to drastically lower death rates, first in the industrial nations and then in the developing countries.

The unfortunate fact, however, is that these two developments have not proceeded apace in all nations. In the industrialized countries, where medical advances first began to significantly lower the death rate, the application of an advanced technology to agricultural methods was generally successful in providing more than enough food for a burgeoning population. In countries lacking comparable industrial activity, however, the application of technologically advanced agricultural production methods has lagged seriously behind medical advances. As a consequence, food supplies have not kept pace with growing populations that have resulted from a declining death rate and a stable birth rate. This phenomenon seems to be at the heart of what is referred to as the "population explosion."

In recent years, as increasing populations in the nonindustrialized countries have begun to strain available food supplies, demographers, social scientists, and public-health officials have put forth a great deal of effort to isolate the causes of, and solutions to, the population question.

THE HISTORICAL DEVELOPMENT OF POPULATION EXPANSION

Prior to the Industrial Revolution, the growth in the world's population proceeded very slowly. In prehistoric times, the lives of primitive people were fully occupied with looking for their next meal. They could gather seeds and fruit, kill small animals, and, working together, sometimes even kill large ones. Yet primitive people were as much hunted as they were hunters. Their food supply was uncertain; they had little or no protection against the elements; they had only the most primitive weapons; and their death rate in such a merciless environment must have been very high. The discovery of fire and the improvement of weapons made life somewhat less precarious, but it is unlikely that the world supported more than a few million humans until people began to control their environment. Such control began with the cultivation of crops and the domestication of animals.

The Agricultural Revolution

The agricultural revolution was the first recorded disruption by people of the relationship between themselves and their environment. Securing reliable supplies of food permitted the human species to increase in number for the first time. Ten thousand years later, isolated societies still exist that have not participated in this revolution. Most of the human race, however, gradually forsook the role of the hunter and became farmers or shepherds. The relatively assured food supply permitted a somewhat lower death rate and a consequent rise in population. This newly acquired control of plant and animal energy permitted at least some humans to direct their activities away from the never-ending chore of providing the necessities of life. Pyramids were built, philosophers began to question the origin and purpose of people and their environment, and new territories were discovered and exploited. Still, about three-fourths of the population was engaged in agriculture. Only the remaining one-fourth of the population was available to engage in capital formation activities that tend to raise the economic well-being of society.

The Industrial Revolution

The Industrial Revolution, with its associated improvements in food supply and medical knowledge, resulted in a sharp drop in the death rate. The consequent increase in population began in Western Europe around the end of the eighteenth century. From 1 AD until 1650, the average rate of increase in world population was about 150,000 per year. By the end of the nineteenth century, a new, sharply higher rate of growth had begun. In England, between 1800 and 1900, the population increased from 9 to 35 million, excluding the millions who emigrated. During the nineteenth century, the world population grew at an average annual rate of 4.5 million. Most of this increase occurred in Europe, the scene of the original Industrial Revolution, and in the new territories to which Europeans had migrated.[1]

The existence of newly discovered lands served as an escape valve for the swelling populations of Europe during the eighteenth and nineteenth centuries. Between 1800 and 1924, when the United States brought a halt to its open immigration policies, almost 60 million Europeans left Europe for countries throughout the world. This tremendous outflow of humanity had a beneficial effect on the countries of Europe, for it relieved population pressures that were swiftly building as a result of the Industrial Revolution.

The Twentieth Century

The beginning of the present century witnessed a new development that was to have a tremendous effect on the rate of growth of the world's population.

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1. Lord Boyd Orr, "Mankind's Supply of Food," in Fairfield Osborn (ed.), *Our Crowded Planet* (London, England: George Allen & Unwin, 1963) p. 83.

Those countries with the more advanced medical technology began to export that technology to countries that had not developed such medical care. Diseases such as small pox, malaria, and cholera, which had previously ravaged entire populations were brought under control, causing a dramatic drop in the death rates. The birth rates in such countries, however, continued to increase and population began to grow rapidly. By 1946, the world was adding to its population at the rate of 22 million people a year. By the early 1950s, the rate of increase had reached 30 million a year. It is now estimated that world population is growing at the rate of at least 94 million people a year.

THE DEMOGRAPHIC TRANSITION

In past agricultural societies, birth rates ranged from 35 to 50 per thousand, while death rates ranged from 30 to 40 per thousand. Such historical rates would normally result in a natural rate of population growth of about 0.5 to 1.0 percent per year. However, agricultural societies did not grow at this rate because of wars, famine, and epidemics. After the Industrial Revolution, death rates in Europe declined sharply. Currently many countries have death rates under 10 per 1000. Naturally, this drop in the death rate resulted in an increased rate of population growth.

The excess of births over deaths is now approximately the same as it was at the beginning of the Industrial Revolution. But note the time lag. It took much more time for the birth rate to fall than the death rate. This lag is commonly called the *demographic transition*, and it is the main reason for the increased rate of world population growth in the last two centuries.

European countries were able to increase their standards of living during this period of rapid population growth because they enjoyed the fruits of the Industrial Revolution. Technology improved agriculture to the point that 10 to 20 percent of the population could now produce more food than the total population could consume. This surplus freed the energies of the balance of the population for the production of other goods and services.

The Lag in the Developing Nations

The primary concern with population growth today is that the developing countries have reduced their death rates through the use of modern medical techniques but have not reduced their birth rates. In short, the time lag between reduction in death rates and reduction in birth rates is still present—the demographic transition has not taken place. The resultant rising populations are pressing against available food supplies that are limited by obsolescent cultivation methods.

In certain sections of the world, the dilemma of falling death rates and stable birth rates at a relatively high level is particularly acute. Notice partic-

ularly in Table 15-2 the birth rates and death rates that have prevailed in Africa, Asia, and Latin America. Although the death rates are higher than in other areas, these areas of the world are characterized by very high birth rates. Moreover, these areas have experienced little or no decline in the birth rate while the death rate has dropped sharply over time. As a result, population growth in these areas has been consistently high.

The Aggregate Effect of the Demographic Transition Lag

To get some idea of the aggregate effect of the demographic transition, we should look at total population by area over time. Table 15-3 presents such a picture. If we combine the world annual rate of increase of about 1.8 percent with the world population of over 5.2 billion people, we can then project a world population in excess of 6.3 billion people around the turn of the twenty-first century. What are the chances that such a projection is valid? What factors can we expect to affect its validity?

PROJECTIONS OF WORLD POPULATION

Any attempt to project world population into the future is necessarily fraught with difficulties. It is hard to imagine any event that would be subject to more forces than the rate at which the human race reproduces itself. Nevertheless, if one wishes to forecast future world population, an attempt must be made to isolate the most significant forces. One must attempt to quantify these forces in order to get some idea of their relative importance.

Even if one is able to adequately explain past population growth, however, the forecaster needs to be reasonably sure that the forces affecting past population growth will continue to do so in the future. Over the past 200 years

TABLE 15-2

Annual Rates of Increase in Population, 1989

	Annual Rate of Increase	Birth Rate per 1,000	Death Rate per 1,000
Africa	2.9%	45	15
Asia (except USSR)	1.9	28	9
North America	0.7	16	9
Latin America	2.1	29	7
Europe	0.3	13	10
Oceania	1.2	20	8
USSR	1.0	20	10
World Total	1.8	28	10

SOURCE: "Data Sheet," Population Reference Bureau, Inc. (1989).

TABLE 15-3

Population of the World
(In millions of people)

	1920	1930	1940	1950	1960	1970	1980	1989
Africa	140	157	176	207	257	344	472	646
Americas	208	244	277	329	412	511	617	713
Asia	966	1,072	1,212	1,384	1,684	2,056	2,618	3,061
Europe	329	356	381	395	426	462	484	499
Oceania	9	10	11	13	17	19	23	26
USSR	158	176	192	181	214	243	266	289
World Total	1,810	2,015	2,249	2,509	3,010	3,635	4,640	5,234

SOURCE: *Demographic Yearbook*, United Nations (1960 and annually) and "Data Sheet," Population Reference Bureau, Inc. (1989).

or so, many individuals have offered explanations of population dynamics (change). None of them has ever offered a theory of population growth that has been universally accepted. The most famous commentator on the population question was Thomas Robert Malthus (1766–1834), an English clergyman and economist.

Malthusian Theory

Essentially Malthus's theory is that populations will always outstrip their means of subsistence because food supplies grow arithmetically while populations grow geometrically. Eventually, population would outstrip food production, as shown in Figure 15-3.

At the point at which populations increase to the limits of their food supply, further population growth would be restrained by powerful "checks," including moral restraint, vice, and misery. "Positive checks" are those that increase the death rate; "preventive checks" are those that reduce the birth rate.

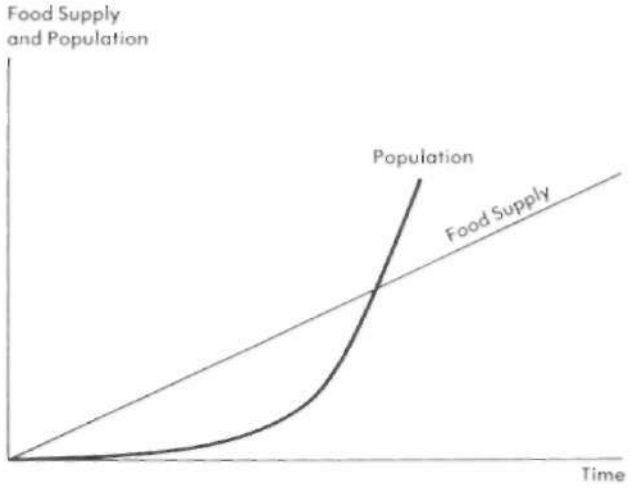
Malthus's positive checks were simply the cruel aspects of life. He included overwork, insufficient food, poor habitation, overcrowded urban areas, unwholesome foods and medicines, sickness and disease, and war.[2] Malthus recommended self-restraint and delayed marriage as the only acceptable preventive checks. He considered contraception to be an unqualified vice and refused to consider it as an admissible alternative to the positive checks just enumerated.

Malthus's writings on population have had a curious history. From the first, they have received both praise and criticism, but they display an astound-

2. Thomas Robert Malthus, *Population: The First Essay*, Foreword by Kenneth E. Boulding (Ann Arbor, MI: University of Michigan Press, 1959) p. 38.

FIGURE 15-3

Geometric Growth in Population and Arithmetic Growth in Food Supply



ing ability to recover from criticism and remain at the forefront of writings on this question. It is literally impossible to pick up any book even vaguely concerned with population change without encountering some reference to his work.

Two basic criticisms have been made against Malthus's ideas. The first, which was particularly relevant in his time, is that his population theory was written as part of an argument against William Pitt's Poor Laws. Malthus believed that society could not effectively help the poor through charity because by do doing, it would cause the poor to lose all incentive to work productively or to limit births. Thus, the number of poor would increase as a consequence, while the supply of food would not be affected. He wrote that the net result of charity to the poor would be that "...the same produce must be divided among a greater number, and consequently that a day's labor will purchase a smaller quantity of provisions, and the poor therefore in general will be more distressed."[3] One can well imagine the hue and cry that arose against this seemingly heartless position, which held that to assist the poor was actually to injure them in the long run.

The second major criticism against Malthus's theory, one still heard today, is that he ignored or did not anticipate the tremendous increase in arable land in the newly discovered and exploited areas of the world and, more

3. Malthus, *Population*, p. 47.

seriously, with not anticipating the rising productivity per acre that resulted from the Industrial Revolution. One can well ask, however, whether these events have completely contradicted Malthus's theory, or whether they have merely postponed the attainment of a population equilibrium.

The Problem of Inherent Uncertainty

As can be seen from the Malthusian theory of population, long-range population forecasts are highly vulnerable to unpredictable forces. These forces can greatly alter the population growth rates for individual nations and for the world as a whole. For example, there is always the chance that the people of the world may accept a cheap and readily available method of artificial birth control. Science may perfect a method of consciously controlling family size that is acceptable to a significant proportion of the world's population. On the more ominous side, previously unknown diseases—AIDS comes to mind—may develop that could decimate large segments of the populations in countries unprepared to deal with them. Or, equally horrible to contemplate, a nuclear war could rid the world of perhaps one-half its population in the initial onslaught and aftermath. These are all possibilities, good or evil, that would radically upset the current growth rate of world population and possibly bring it to a complete halt.

Birth rates, death rates, supplies of food, public-health measures—all of these factors are constantly acting upon the rate at which the human race is changing in number. Other important forces, such as those that motivate people to have children at one rate or time rather than another, are more difficult to quantify. There are a number of theories that purport to explain why a given nation's birth rate is higher or lower than that of other nations at or over a given time, but none of these theories is completely satisfactory. None explains variations in birth rates for all countries over all periods of time. Nor should one expect to find such a generalized theory. Given (1) the large number of cultures and subcultures that have existed through history, (2) the vastly different educational levels in various parts of the world, (3) the different attitudes of the world's major religions toward the question of conscious birth control, and (4) other basic economic and sociological differences between peoples; it would be too much to expect one explanation of the rate of population growth to fit *all* peoples, *all* regions, or *all* times.

The Continued Increase in World Population

There now seems to be little doubt that population will exceed 6.3 billion by the turn of the next century, assuming that the necessary food supplies and shelter are forthcoming. But this assumption is critical to the forecast. Can the people of the world continue to provide the necessities of life within this relatively short period? And further, will it be possible to raise that portion of

the human race that is presently close to starvation to a nutritional level that is considered adequate against standards that presently exist in the wealthier industrial nations? Finally, assuming that food supplies and shelter are produced that are sufficient to significantly raise the living standard of the people of the world, will these supplies be distributed in an equitable manner to all of the world's people so that presently existing large pockets of hunger, sickness, and privation can be erased?

THE WORLD FOOD SUPPLY—FUTURE PROSPECTS

When dealing with the prospects for the world supply of food, and considering its adequacy for feeding the prospective future world population, one is confronted with something of a dilemma. World food supply and world population, when placed in juxtaposition, form a classic case of circular causality. Obviously world population cannot grow faster than the food supply available to sustain it. On the other hand, it is extremely doubtful whether the food supply will increase fast enough to outpace the population and yield surpluses. Should world population growth outpace the rate of increase in food, then the only result can be eventual famine and death for a considerable portion of the world's people. What are the prospects of feeding a forecasted world population of 6.3 billion at the beginning of the next century?

The present outlook for feeding the world's population in future years is ambiguous. At a time, many nations of the world chronically face poverty, hunger, and starvation, while other nations are in the envious position of being self-sufficient in food. In addition, although some nations are self-sufficient in certain years, the food surpluses resulting from bumper crops are apparently insufficient to cover shortages in less productive years. In years of low crop yields, nations such as the Soviet Union and China turn to the world marketplace for food to avert disaster. In fact, the entry of the Soviet Union and China into the world food marketplace in 1972–1973 magnified the delicate balance between food and population that exists throughout the world.

The world food crisis of 1972–1974 brought a greater awareness on the part of industrial nations concerning the long-range challenge of feeding the world's population. Most experts concur that the crisis was symptomatic of the inadequate production and distribution of food throughout the world. But they disagree on the extent of the future food shortage problem. Those who are optimistic about our ability to provide adequate food supplies believe that the food crisis was the result of unfavorable factors that by chance occurred simultaneously during that period. In their view, the world has resumed its long-term upward trend in agricultural production. Pessimists are likely to concede that the number, timing, and magnitude of the forces responsible for the crisis were atypical, but they maintain that the return to more normal

circumstances does not mean that the basic long-term problem of feeding the world's population has been solved.

Food-producing nations, particularly those such as the United States that had artificially restricted the production of certain foods, reexamined their production policies. With an emphasis on increased production, harvest yields improved significantly and world food stocks were replenished to safe levels. However, it is recognized that shortfalls in some areas of the world are not only possible but likely, in which case the matter of an equitable distribution of export supplies will again become a major concern. Like world population, the world's food supply has become a matter of inherent uncertainty.

World Food Bank

The food crisis of the early 1970s emphasized the need for some sort of stop-gap solution to cope with such short-term food problems. One proposal that has gained wide support in many quarters is that of a world food bank. Proponents contend that the creation of an internationally managed world food bank would provide stability in the world food supplies and perhaps substantially reduce the pressures of international competition for available food supplies. It would also diminish the world's dependence on the United States for the production and distribution of excess food products.

Although there are many variations of the world-food-bank proposal, the plan of the United Nations' Food and Agriculture Organization (FAO) serves as a general model. This plan calls for all governments, including food importers as well as exporters, to maintain specific minimum levels of food stocks to meet international emergencies. Government representatives would meet regularly to review the adequacy of existing food stocks and take whatever action they deemed necessary. Industrial nations would be assisted in establishing and maintaining the reserve crop necessary for self-protection against crop failures by international agencies such as the World Bank, the International Monetary Fund, and the FAO.

Despite the many complex political and economic problems associated with a world-food-bank plan, many observers believe that it offers the best promise of ameliorating short-term pressures on food products. They recognize, however, that the basic problem is of a long-term nature and that the race between food products and population must be ultimately dealt with by effectively increasing agricultural output or reducing population growth.

Potential Versus Actual Production

Potentiality is not actuality. Because the arable land of the world is limited by topography and climate, other productive inputs, such as farm equipment and particularly fertilizer, will have to be substituted to increase production to feed the world's growing population.

Investment. In recent years there has been a growing awareness on the part of developing countries of the need for greater resource allocation to the farm sector. To a large extent this realization has been fostered by the necessity of importing food to feed increasing populations is costing valuable foreign exchange that could be better used in buying farm machinery and equipment. Greater effort is now being directed toward the construction of a chemical industry that would be capable of satisfying the tremendous need for fertilizers. The production potentiality of intensive application of fertilizers in the developing countries is shown by comparing recent increases in crop production in Europe and North America to those in Asia, Africa, and Latin America. Over the past four decades, output per acre in North America and Europe, where fertilizer and machinery are extensively used, has more than doubled, while in Asia, Africa, and Latin America, it has risen by only approximately 10 percent. Obviously if the latter areas begin to adopt the modern, highly productive techniques of agriculture, their farm output will increase dramatically.

The achievement of successful developmental breakthroughs in agricultural productivity is generally thought to be the responsibility of the industrial nations. One such agricultural development may exist with hybrid wheat. Major seed producers in the United States are attempting to develop a commercially viable hybrid wheat that ultimately could bring abundance to granaries throughout the world. The new wheat could allow a farmer to increase wheat yields 25 percent or more immediately. As the hybrids are improved, yields could double within a few years. Since wheat is the world's largest crop, the benefits derived from hybrid wheat may significantly lessen hunger throughout the world.

In addition to wheat, agricultural researchers are trying to boost yields of soybeans but thus far have been frustrated in their attempts to do so. Agricultural scientists see this research as a major means of providing enough protein for the growing world population. World consumption of soybeans is increasing faster than the beans can be grown in the United States, which is a major world supplier. Although soybean production in the United States has increased over 100 percent since 1970, much of this increase has been achieved by increasing soybean acreage. Therefore, the discovery of a superproductive soybean is being given high research priority in the hope of providing sufficient soybeans to meet the world's protein needs.

Obviously, if the previously mentioned research proves successful, world farm output could increase dramatically. Those who are optimistic about the future see such efforts as a hopeful indication that in the not-too-distant future some of the developing nations of the world will become self-sustaining as far as food products are concerned.

Aquaculture. Another recent development has excited the imagination of many commentators on world food problems. Research scientists in the U.S. Department of Agriculture have developed a method for converting ocean fish

that had previously been considered inedible into a palatable, high-protein food. This conversion process opens up a vast supply of a high-protein food that is badly needed in many of the world's food-shortage areas. The potential food resources contained in the world's oceans have barely been touched up to the present time. This new method of exploiting them is a manifestation of the quickening interest in utilizing the resources of the sea. So much interest in the potential of the sea as a source of food has developed that a new term, *aquaculture*, has emerged to describe scientific methods of harvesting the ocean's riches. Many experts feel that if the sea can be exploited scientifically as a source of food, the problem of shortages in the world food supply will be largely solved.

Redistribution of Food Supplies. Some areas of the world obviously are better suited for agriculture than others. Soil fertility, climate, length of the growing season, and the amount of available arable land all influence the ability of a nation to become self-sufficient in food production. Certain areas of Africa, for example, offer little hope of developing an efficient agricultural sector because they lack sufficient rainfall. This being the case, it becomes necessary for such nations to cultivate those resources that they do have in abundance (in the case of the African nations adjacent to the Sahara, petroleum would be such a resource) and trade them to the more fortunately endowed agricultural nations in exchange for food. A famous case in point is Great Britain, a poorly endowed nation as far as agricultural resources are concerned that grew to economic greatness by utilizing its facility for the fabrication of goods.

It must be made quite clear, however, that most of the nations of the world do have the potential for developing a viable agricultural sector. In any discussion of the redistribution of food products from food surplus areas to food shortage areas, one always encounters the danger of emphasizing too heavily the responsibility the surplus areas have to the shortage areas. It is certainly true that it would be morally inexcusable for the surplus areas to refuse food to nations in need, but it is equally true that the persistent subsidizing of food needs by those nations with surplus food supplies may remove any incentive the shortage areas have to develop efficient agricultural sectors in their own economies.

Pessimistic Consensus

Not all experts agree that the long-run solution to feeding the world's growing population lies in increased investment or the redistribution of excess food. Pessimists point to several critical factors that they believe will undermine attempts to increase the supply of food at a rate required to sustain the population of the world.

They argue that the use of fertilizers and technology to increase per-acre yields may be reaching a point of diminishing returns, where it costs more to

increase production than the added production is worth. As for aquaculture, many oceans already have been overfished, as is evidenced by the fact that despite more time and money invested in ships and equipment, fish production has been declining since 1970.

The world is also running out of new lands to cultivate and, in many countries, land is being taken out of production as urbanization expands. Fresh water for use in agricultural production is becoming scarce; most rivers that form convenient sources of fresh water already have been tapped.

A final factor is the growing affluence of the industrial nations. In Western European and North American countries the demand for food is increasing out of proportion to population. People consume more beef, poultry, eggs, and milk as they become more affluent, and grain that would be directly consumed in poor countries is indirectly consumed as food for livestock in industrial countries.

Consequently, those who maintain this point of view contend that the only viable alternative to rapid increases in food supplies is to slow down world-population growth rates. The question of conscious control of the birth rate and thus the size of the population is a thorny one indeed, but it cannot be ignored in view of the increasing sentiment all over the world in favor of it.

POPULATION CONTROLS

Since rates of population growth are, in a broad sense, determined by the relationship between birth rates and death rates, it follows that measures to control population size must operate on one or the other or both of these variables. To a large extent, the last 50 years or so have seen almost exclusive attention to efforts designed to lower death rates. A great deal of research and public-health activity has been devoted to alleviating suffering and death in developing nations, whose populations regularly have been decimated by diseases that were historically endemic to the areas. Probably the outstanding effort in this regard has been the worldwide effort to eradicate malaria through mosquito control and vaccines that impart immunity to this dread disease. Massive efforts to improve sanitation levels through the construction of sewage systems and water systems that would ensure the delivery of pure water have significantly increased the overall health levels of populations and thus reduced death rates. In Sri Lanka, for example, the expenditure of $2 per person on a public-health campaign resulted in the reduction of the death rate by 75 percent in a ten-year period.[4]

Such widespread efforts to decrease death rates have not been matched by measures that would induce similar downward trends in birth rates. The

4. Eugene R. Black, "Population Increase and Economic Development," *Our Crowded Planet*, pp. 67–68.

result, as we have seen, has been to accelerate population growth to the point that, in many countries, population is beginning to strain available food resources. Only in the past 25 to 30 years has much attention been focused on the question of spiraling population growth, and only in the past 15 to 20 years has significant research effort been instigated in an attempt to deal with the problem. This is not to say that the population problem was completely ignored in previous decades, but those who spoke out on population problems were largely voices in the wilderness. Only in the past 30 years or so have researchers focused on the question of spiraling population growth and only in the past 15 or 20 years have research efforts concentrated on providing solutions.

Now there are indications of a growing worldwide awareness of the problems posed by rapid population growth. In many developing nations, this awareness is being accompanied by programs to address the problem. Efforts to disseminate knowledge and methods of birth control are underway in India and South America, as well as in other areas of rapid population growth. The effectiveness of such programs cannot be appraised at this time, but the combination of money, time, and human effort that is being devoted to them seems to indicate that eventually they may significantly lower birth rates.

Of course, the obstacles to the success of such programs loom very large in many areas of the world. The relatively low educational level of the people, the social stigma attached to having a small family in some areas, the active opposition to contraception that is present in predominantly Catholic countries and, finally, the almost overwhelming immensity of the task of spreading birth-control information to literally billions of people give rise to serious questions as to whether birth control is really a solution to rapid population growth, at least in the all-important short run.

Because of these obstacles, the subject of birth control is a highly emotional one in many countries throughout the world. Consequently, the United Nations and other international bodies, such as the World Bank, have approached the problem of birth control with great caution. Recognizing the diversity of interests among nations, global organizations are seeking ways to present the case for birth control in terms of national social values. Interests are easy to antagonize, and emotions can become aroused at either the private or the public level. For example, the alarmist Malthusian-style position that focuses attention on rapid population growth in the developing countries may be interpreted as being neo-imperialistic. If the developing nations suspect an ulterior motive on the part of industrial nations, distrust and possibly fear may result, which could lead to open opposition to any birth-control program. Thus, international organizations must relate birth control to the national interests of the developing nations and convincingly show that those nations will be the principal beneficiaries of any control program.

Although not likely, it is possible that such attempts to check the current rate of population increase will succeed, and in a much shorter period than is currently envisioned. Should this happen, and birth rates begin to decline

toward a more normal relationship with death rates within the present generation, then much of the potential danger inherent in the aggregate population problem will be removed.

POPULATION TRENDS IN THE UNITED STATES

In late 1986, the U.S. Bureau of the Census released a preliminary report of the results of its 1986 survey on the nation's population. The median age for first marriages in the survey was 23.1 for women and 25.7 for men. The median first-marriage age for women has remained higher in the 1980s than previously recorded. Average family size fell to a new low of 3.17 persons in 1988, down from 3.29 in 1980. The drop reflects the preference for fewer or no offspring. Average household size also reached a record low of 2.64 individuals.

Bureau of the Census Projections

The Bureau of the Census has published revised estimates of the population through the year 2025. These estimates were constructed under different sets of assumptions regarding the birth rate, death rate, and net immigration in the United States for the relevant time period. Table 15-4 shows the different projections.

Series 1 reflects the assumptions of 1.5 births per woman, an average life expectancy of 77.9 years, and a yearly net immigration of 300,000. These assumptions produce the lower population figures of the four series. Series 2 is based on a birth rate of 1.8, an average life expectancy of 81.2, and an annual net immigration figure of 500,000. The third projections, Series 3, incorporates

TABLE 15-4

Projections of Total U.S. Population, 1995–2025
(In thousands)

Year	Series 1 (Lowest)	Series 2 (Middle)	Series 3 (Highest)	Series 4 (Zero immigration)
1995	255,239	260,138	265,151	254,459
2000	259,576	268,266	278,228	259,304
2005	262,363	275,604	291,710	263,189
2010	264,193	282,575	305,882	266,528
2015	265,072	288,997	320,494	269,131
2020	264,536	294,364	335,022	270,493
2025	262,218	298,252	348,985	270,234

SOURCE: U.S. Bureau of the Census, *Current Population Reports*, Series P-5, No. 1018.

the highest set of assumptions with 2.2 births per woman, an average life expectancy of 88.0 years, and a net immigration of 800,000. Series 4 is identical to Series 2 except it assumes a net immigration figure of zero.

It is obviously impossible to predict which of the four estimates, if any, will ultimately be correct. Since actual population in 1988 was about 248 million, even if Series 1, the most conservative of the group, proves to be accurate, it would result in an increase of about 12 million people in this country by the year 2000 and an increase of over 14 million by the year 2025.

Note that of the four projections presented in Table 15-4, only Series 3 assumes a fertility rate higher than the zero population growth rate of 2.1 births per woman. Series 4, however, is the only series to assume a net immigration figure of zero.

The Graying of America. In the 1960s and 1970s, many Americans were concerned with high population growth rates and supported population-control policies for this country. As a means of controlling population growth, a policy of zero population growth was advocated. According to this approach, population could be stabilized, not immediately, but over a 50-year period or so. To accomplish this goal, the total fertility rate of American women would have to be 2.1 for each generation. Thus, 1,000 women would have to bear 2,100 children in order to replace themselves with 1,000 women of childbearing age in the next generation. The extra 100 children allow for mortality and the fact that more than half of the children born each year are female.

If this child-bearing rate were maintained over several generations, a stabilized population would result—ignoring, of course, increases in population due to immigration. Even with a zero population growth, the nation's population would have increased significantly by the time stability was attained. Major economic and social adjustments would undoubtedly result and, with much lower birth rates in recent years, many such changes have already occurred.

Concurrent with the call for a zero population growth rate, the fertility rate of women in the United States has fallen to approximately the 2.1 level, although net immigration figures continue to rise. The result has been a lower population growth rate.

Population Characteristics. One of the most obvious results of a zero population growth rate is that over time the average age of the nation's population will rise. The Bureau of the Census reports that in 1987 the median age of the U.S. population was 32.1 years; whereas, in 1960 the median age was 29.4 years. Currently, there are 30 million Americans aged 65 years old and over, constituting 12.3 percent of the total U.S. population. In 1960 this figure stood at 9.2 percent. The older segment of our population is now the fastest growing and is expected to increase significantly by the year 2010 when the post-World-War-II baby boomers enter the ranks of those 65 and over.

Labor Force. A changing population profile brings about noticeable changes in the participation rate of the labor force. For example, female participation rates have increased sharply as women have fewer children and are free to enter the labor force in larger numbers at an earlier age. In 1987, the female participation rate in the labor force stood at 56 percent, compared to 37 percent in 1960. Overall, the rate of participation for males has remained fairly stable in most age groups, but has declined sharply for those 55 year of age and older. This group has been affected by early retirement programs, structural changes in the economy, a greater demand for leisure, and technological advances.

With the decline in the number of youths in the 15–19 age group, many service industries that traditionally relied on this group as minimum-wage employees have had to change hiring strategies. In some major urban areas, service industries, such as fast-food restaurants, now pay hourly wages of $6 or more to attract workers. In other areas, these industries are aggressively recruiting retired persons to fill jobs previously held by teenagers.

Environment. With lower population growth, proponents of a zero population growth rate look for improved environmental conditions. This view is based on the fact that population and density are key factors in accounting for our present rate of environmental decay. Critics point out, however, that a lower population growth rate has made only a minor dent in solving the environmental crisis in America. They contend that it is affluence, brought about by economic and technological change, and not population *per se* that is the major contributing factor to environmental pollution. Even with lower population growth rates, the increased demand for a number of products, such as automobiles and energy, has produced greater amounts of air, water and solid waste pollution. The by-product of this increased demand is that a much larger share of national resources must be allocated to the public sector to launch a meaningful attack on environmental decay.

Social Security. As the U.S. population ages, the public sector is experiencing additional pressures, not the least of which is to provide for adequate retirement and medical-insurance programs for older Americans. Older persons have approximately one-half of the income of their younger counterparts. Indeed, many of our nation's poor became so only after reaching the age of 65. For one in five older Americans, Social Security provides at least 90 percent of their income. But the Social Security system is experiencing fiscal strains in attempting to provide economic security for this age group.

The system traditionally has relied on a large and growing number of working taxpayers to finance the retirement and medical needs of those who are no longer in the work force. But today, the opposite trend is occurring. The 65-and-over population has been growing, while growth of the labor force has been slowing. In 1960, the total number of individuals receiving benefits from Social Security amounted to 5.2 million, with an average monthly benefit

totaling $82. By 1990, the number of beneficiaries had increased by 750 percent to 39 million, with average monthly benefits having increased to $566. On the other hand, the number of workers, including the self employed, contributing to the system increased by only 41 percent, from 93 million in 1960 to 131 million in 1990.

In order to transfer sufficient income flows from the slower growing labor force to a faster growing retired population and to finance a portion of the Medicare Program introduced in 1965, both the maximum taxable earnings and tax rate have increased substantially. In 1960, the maximum Social Security tax paid by an employee was $144, and earnings were taxed at a rate of 3 percent on the first $4,800 earned. By 1990, the maximum Social Security tax paid by an employee had risen to $3,924, and the tax rate of 7.65 percent was applied to the first $51,300 earned.[5]

Although dollar figures are in nominal terms and are thus affected by various rates of inflation over long periods of time, the continuing shift in the age profile is quite clear. The graying of America is causing an increased financial tax burden on those in the work force.

Private Sector. The changing population mix has also affected the private business sector. Some industries were impacted immediately, such as industries producing dolls, toys, tricycles and diapers, to name a few. Shortly thereafter, the impact was felt by industries producing goods for the elementary school group, as a decline occurred in the demand for games, bicycles, school equipment, clothing, and children's furniture. As the years pass, the diminished rate of new family formations will eventually affect the housing, appliance, and durable-goods industries.

Businesses have had to make major adjustments in the face of lower population growth rates. Some have simply withdrawn from the marketplace, while others have diversified their product lines, merged with other companies or sought new international markets. Services have also been affected. Schools, hospitals and a variety of other institutions have had to close their doors. In the field of medicine, the demand for services from obstetricians and pediatricians has also dropped sharply. With an older population, however, the demand for travel, geriatric services and adult learning classes has risen markedly.

Immigration

The previous discussion centered on the possible effects of a stabilized population based on maintaining birth rates of 2.1 per women. However, the possibility exists that the realization of a stabilized population in the foreseeable future could be frustrated by continued high rates of immigration.

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5. Refers to taxes paid by employees only; employers also contributed a matching amount.

Immigration policy tends to reflect existing economic, social, and political conditions, not only in the United States but also in other countries of the world. Statistically, immigration figures are not well documented and in the case of illegal immigrants are only "best estimates." Records indicate that the United States has received more immigrants than any other nation in history. More than 52 million have arrived since 1820. In more recent years, the United States has accepted more than twice as many legal immigrants for permanent resettlement as the rest of the world's countries combined. Only a few nations, including Canada, Israel, Australia, and Argentina currently accept immigrants.

In 1987, an estimated 602,000 legal immigrants entered the United States. In addition to those legally entering the country, 65,000 arrived as refugees and at least another 1 million entered illegally. Thus, the number of immigrants entering the United States in 1987 was about 1.7 million people. In 1987, legal immigration accounted for approximately 26 percent of the nation's population growth. By the early part of the next century, assuming a fertility rate of 2.1, immigration's share of annual population growth may exceed 50 percent. To grasp the magnitude of this figure, a historical frame of reference might be useful. Not since the first twenty years of this century, when the United States opened its doors to large numbers of Southern and Eastern Europeans, have immigration totals been in excess of 1 million per year.

Figure 15-4 indicates that of the 643,000 legal immigrants entering the United States in 1988, 41 percent were born in Asia. An additional 39 percent were accounted for by North American nations, while only 10 percent were from Europe.[6] Mexico continues to be the leading country of origin for immigrants to the United States, accounting for 15 percent of those admitted. Table 15-5 presents the ten countries that produced the largest number of immigrants to the United States in 1988.

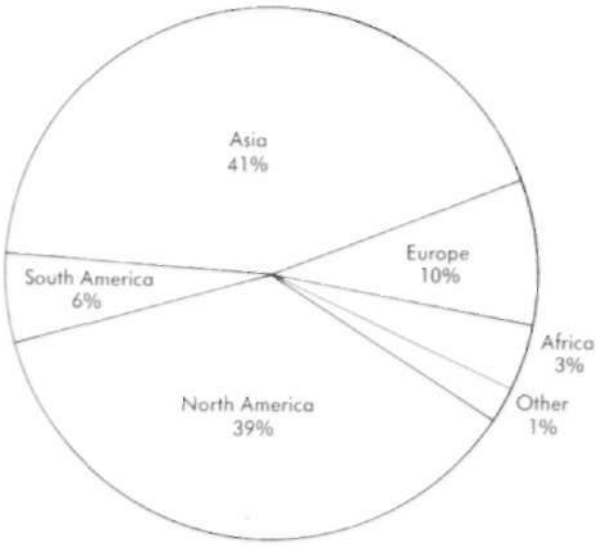
Annual immigration could possibly exceed two million in the foreseeable future, partly because illegal immigration is not sensitive to changes in legal immigration quotas. The flow of at least one million illegal immigrants per year is likely to continue, although a decline in the number of refugees admitted to the United States is probable. The best estimate is that in 1987 approximately seven million people resided in the country as illegal aliens.

After nearly a decade of trying to pass legislation dealing with illegal aliens, Congress passed an immigration bill in 1986. In an effort to curtail the number of illegal aliens entering the country, the 1986 law imposes stiff fines and even jail terms on individuals who knowingly hire illegal aliens. Employers must insure that all new employees must have either a U.S. passport, a U.S. birth certificate or a Social Security card, plus a state-issued identification card. Illegal aliens who could prove that they had entered the United States prior to

6. North America includes Central America and the Caribbean countries.

FIGURE 15-4

Origin of U.S. Immigrants, 1988



SOURCE: *Statistical Yearbook*, U.S. Immigration and Naturalization Service (annually).

January 1, 1982, or who had worked on U.S. farms for at least 90 days, were granted resident status for 18 months. They then became eligible for permanent-resident status and, after five years, for U.S. citizenship. Although the law

TABLE 15-5

Immigrants Admitted in 1988, by Country of Birth
(In thousands)

Mexico	95.0	Cuba	27.2
Philippines	50.7	Dominican Republic	27.2
China	38.4	India	26.3
Haiti	34.8	Vietnam	25.8
Korea	34.7	Jamaica	21.0

SOURCE: *Statistical Yearbook*, U.S. Immigration and Naturalization Service (annually).

is difficult and expensive to enforce, it is thought to be a reasonable first step in confronting the problem.

A second reason for projecting continued high immigration is the large number of refugees from Cuba, Haiti, and elsewhere who have been in this country long enough to apply for citizenship. Upon being granted citizenship, former refugees will be able to bring in spouses, minor children, and parents. Their number will be in addition to the annual quotas for legal immigrants.

Regardless of where immigrants originate or whether they cross our borders as legal immigrants, illegal immigrants, or refugees, population projections for the next century that are based on low birth rates and low immigration rates will fall short of the mark. Immigration rates rule out a stationary U.S. population in the foreseeable future.

Surpluses, Social Obligations, and Survival

Because the U.S. is so well endowed with the goods of the world, and because Americans have taken advantage of their resources, the nation is in a very vulnerable position. There is no deeper envy than that felt by the hungry person outside the house of the well fed, and so it is that Americans are the envy of a considerable portion of the world's people. Envy is a destructive emotion and unless it can be satisfied, political and economic relations between the United States and poorer nations of the world may worsen to the point that military action and increased acts of terrorism may result. For this reason, the United States cannot be satisfied simply to feed, clothe, and house its own increasing population; it must also be prepared to aid materially those areas of the world that are not so well endowed.

Probably the most important export of the United States in the coming years will not be its surplus food supplies, but rather its technology and capital. While the United States could perhaps increase its output of food enough to feed the hungry of the world in the short term, it is doubtful, given the rate of population increase, whether it could long sustain them. The only viable long-run solution lies in the development of efficient agricultural systems in those countries that are not self-sufficient in food production. It is in the development of such systems that the United States can be of greatest service, both to the world's people and to itself.

THE ALTERNATIVES BEFORE US

Because the question of world population is multifaceted and complex, this discussion has been able merely to scratch the surface of the problem. Still, it seems worthwhile to close the chapter by considering a series of alternative

approaches for dealing with population growth. Admittedly, individual proposals for dealing with the problem do not touch upon all its facets, but considering several alternative proposals, it is possible to highlight virtually all of its aspects.[7]

Ultimately, the rate of growth of world population rests upon the rate at which children are born and the rate at which the population as a whole is dying. As a corollary to this statement, attempts to control world population growth must work upon either of these rates, or both.

History, ecology, and reason tell us that eventually population growth will return to an equilibrium with the growth in the economic environment. There seems to be little doubt that the world's population is currently growing faster than the economic environment, especially in the developing nations. It is impossible to predict at this time at what point stability will be reached, but the fundamental choice seems to be between lowering the birth rate and allowing the death rate to rise. If one objects to limiting births, then one must be prepared to favor increasing deaths. Even if one believes that some revolutionary event, such as the Industrial Revolution, is imminent in the developing nations, until such a revolution comes to pass, the population will eventually achieve equilibrium one way or another. The question is not whether equilibrium is to be re-established, but by what means.

A Significant Increase in the Death Rate

There are relatively few serious advocates of a return to higher death rates. Our entire medical research effort is oriented in precisely the opposite direction. Nations throughout the world are involved in public-health programs designed to prevent premature deaths caused by diseases arising from unsanitary living conditions, disease-carrying insects, or outright ignorance of the lifesaving capabilities of modern medicine. A few economists have suggested that developing nations postpone public-health expenditures and, in this way, prevent the drastic fall in death rates that always accompanies them. These economists suggest that such a measure would hold the population fairly steady and allow resources that would have to go to feed a burgeoning population to be allocated to investment goods that would quicken the pace of economic development. Aside from the moral aspects of this suggestion, one can question the effectiveness of a stable population if it continues to be wracked by disease because of the absence of public-health expenditures. One can also question the possibility of economic development based upon a disease-ridden work force.

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7. The authors do not pretend to have presented an exhaustive treatment of this issue. Some aspects such as the psychological, the political, and the theological have not been covered at all; our only defense is that this book is concerned primarily with the economic issues.

Another proposal that might fit in this category is forced abortion. A few countries, such as China, have adopted this method, but there seems to be a great deal of opposition to such a remedy throughout most of the world. The idea of taking the life of an unborn infant runs directly against the concept of the worth and dignity of the individual that pervades most cultures. It is somewhat doubtful whether such a remedy would ever find widespread acceptance on a worldwide basis, although that does not mean it is impossible.

There does not seem to be much hope for a solution to population pressures by increasing the death rate. People have been exposed to the opposite kind of effort for too long to consciously permit efforts to shorten life expectancy. Thus, one must look elsewhere for a solution.

Emigration

The movement of masses of people from overcrowded areas to places where living room is available has long been one solution to population pressure. The emigration from Europe in the eighteenth and nineteenth centuries was one of the relief valves following the rapid population growth generated by the Industrial Revolution. It is questionable, however, whether emigration is still a viable solution in the last quarter of the twentieth century. The monetary costs involved in moving literally millions of people from, say, Latin America to Canada would be prohibitive, to say nothing of the almost impossible human difficulties that would be involved.

Thus, emigration does not seem to be a reasonable short-run solution to overpopulation. The monetary costs alone would be so great that a fraction of the total spent to increase agricultural productivity in low-crop-yield areas might well result in a much more efficient expenditure of funds. Such a possibility leads directly to the third alternative solution to the problem of excess population.

Rise in Production to Meet Growing Needs

This alternative seems to present the greatest possibilities for a short-run solution to the population problem because most of the increase in food production has taken place in the agriculturally advanced economies. Many of these nations have been burdened with heavy surpluses of food products, while at the same time experiencing lower birth rates. Developing countries, on the other hand, have barely been able to keep pace with the needs of their rapidly growing populations.

The difficulties of raising agricultural production in the food-shortage areas of the world have already been discussed. It is important to emphasize once again, however, that exporting surplus food from the haves to the have-nots does not seem to be a viable long-run solution to the problem. The emphasis must shift to the exporting of agricultural expertise and capital to

allow the nations with food shortages to develop their own efficient agriculture. Certainly this does not mean that all exports of food should be immediately cut off. Such a move would likely prove disastrous for some of the developing countries. But unless there is a massive effort on the part of all the nations of the world to develop self-sufficient agricultures in food-deficient countries, by the year 2000 the world could well witness that most terrible of all population checks–famine.

Thus, rapid increases in agricultural productivity hold the most immediate hope for the problem of excessive population precisely because, most often, populations are larger than the food supply available to feed them. The truth of this fact is spreading rapidly among nations faced with the problem, and the growing emphasis on the development of efficient agricultures is cause for hope that the world need not face widespread famine.

Birth Control

With this alternative probably rests one important long-run solution to the problem of excessive population. There is some finite limit to the number of people that can inhabit the earth, if only because of spatial and resource restrictions. World population cannot grow without end; an equilibrium must eventually be reached between the people inhabiting the earth and the resources available to sustain them. It is reasonable to suggest, then, that world population should stabilize at a point somewhat short of the absolute limit imposed by the above restrictions. If one has any concern at all for what has been termed the quality of life, then this suggestion must be admitted. Quality of life refers to the manner in which people live—the composite of material and nonmaterial things that are available to use and to enjoy during an individual's sojourn on earth. Food, clothing, shelter, elbow room, the right to acquire knowledge or enjoy beauty, the right to be left alone—all of these things depend in large part on the number of people that inhabit the world at any given time.

Certainly the most-discussed method of controlling population is birth control. Whether such control is exercised by the use of artificial methods including sterilization, or whether it results from later marriage, abstinence, or some natural method, the results are the same—a decrease in the number of children.

But birth control is not the panacea that it might seem. There are serious difficulties involved in the implementation of birth-control programs, especially on a national scale, and many experts on the subject remain to be convinced that such programs can significantly affect the birth rate. The reason for this uncertainty is readily seen. Birth-control concerns what is probably the most intimate and personal facet of human relationships, and the problems in rigidly ordering this relationship make practically all other difficulties pale by comparison. But this is not to say that birth control does not hold out real hope for stabilizing population growth in the long run. As the educational and

economic level of the world's people rises, and as methods of birth control acceptable to all groups are developed, it is likely that more people will accept this solution.

CONCLUSION

Ultimately, the hope for a solution to the population problem lies in the intelligence and ingenuity of people. Humanity became the dominant species on earth precisely because humans alone, among the vastly diversified life forms on earth, have such powers. To deny that people will use them to solve this problem is to deny the one characteristic that differentiates human beings from all other life forms. The authors are not prepared to make such a denial, and thus feel confident predicting that an acceptable solution to the problem of population growth will be found and implemented in the not-too-distant future.

QUESTIONS FOR DISCUSSION

1. What political and economic obstacles would have to be overcome to organize a world food bank such as the one the United Nations proposes?
2. What political implications do you foresee if the people in areas with food shortages are forced by rapid population growth to remain at the margin of subsistence?
3. Will the developing nations be able to develop efficient agricultural systems with help from the industrial nations?
4. To what extent should the United States concern itself with the world's supply of nonrenewable resources?
5. What factors have accounted for the actual shape of the world-population growth curve in the past several centuries?
6. Under what conditions should the United States limit exports of food to foreign nations?
7. Would you agree with the assertion that the United States is capable of feeding the world's population for the foreseeable future?

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16

EUROPE 1992

A BOON OR A BANE TO THE UNITED STATES?

After decades, if not centuries, of squabbling and fighting over territory, resources, and customs, several nations of Western Europe are well into the process of complete economic integration. This process began after World War II with the realization that the nations, or states, would be better off cooperating with each other than carrying on adversary relationships.

One of the hottest topics of discussion and planning in Europe today concerns the year 1992. It is also an important topic here in the United States as more businesses realize how important a unified Europe will be to their future. In 1992, according to the Single European Act of 1986, the European Community (EC) will remove the last of its barriers to free movement of trade, people, and capital within the 12-nation community. This event will not only have a dramatic effect within the European Community but will impact other nations as well, especially the United States. U.S. businesses and the Congress are just now beginning to realize how great the impact will be and wonder whether that impact will be positive or negative for the United States. Unfortunately, a 1988 survey indicated that only about 40 percent of European

business people and 12 percent of Europe's population know about the European Community. In the United States, the percentages were far less.[1]

FORMS OF ECONOMIC INTEGRATION

Before proceeding, it may be beneficial to clarify some different forms of economic integration. A *customs union* consists of two or more countries that have no tariff barriers among themselves but a common tariff against the rest of the world. In a *free-trade area* tariffs and quantitative restrictions, such as quotas, are abolished between the participating members, but each retains its own policies toward nonmembers. A *common market* is a free-trade area that has common tariffs toward the outside world and has no restrictions on the movement of factors of production within the common-market area. To complete the picture, an *economic union* means that, in addition to having the conditions of a common market, the participating members have also realized some degree of harmonization of national economic policies and some unification of monetary, fiscal, social, and counter-cyclical policies. Hence, one of the basic difficulties of establishing an economic union is that each country must surrender a measure of national autonomy. Or, to put it more positively, some supernational authority whose decisions bind members must be established. Of course, each form of economic integration—customs union, free-trade area, common market, and economic union—may exist in various degrees.

HISTORY OF EUROPEAN ECONOMIC INTEGRATION

An early leader in European integration was Jean Monet of France, who in the late 1940s and early 1950s visualized a single Europe or a United States of Europe. Although Monet is often called the Father of Europe, others had similar dreams including another Frenchman, Robert Schuman.

Early post-World-War-II European cooperation began with the Marshall Plan, which was funded by the United States to promote European economic recovery, and the North Atlantic Treaty Organization (NATO), a mutual defense pact. The Organization for European Economic Cooperation (OEEC), formed in 1948 and centered in Paris, coordinated much of the Marshall Plan activities.

European Coal and Steel Community (ECSC) 1951

With encouragement from the United States, particularly Secretary of State George Marshall, the first concrete step toward European economic integration

1. *ViewPoint* (Summer 1989).

took place with the establishment of the European Coal and Steel Community (ECSC). Based on a proposal made by French Foreign Minister Robert Schuman, France, West Germany, Italy, Belgium, the Netherlands, and Luxembourg signed a treaty in April 1951 by which they agreed to pool and share coal and steel resources. A common European authority established under the Presidency of Jean Monet was to settle future disputes that might arise among community members. Outsiders were skeptical that such a plan could succeed because of previous squabbling among these participating nations. During the years that followed, however, the parties to the treaty carried out the plan successfully.

European Economic Community (EC) 1958

The ECSC proved to be so successful that in 1957 the same six nations signed the Treaty of Rome, which established the European Economic Community on January 1, 1958. Though sometimes called the Euro-market, the European Economic Community became better known as the Common Market. Later the name was shortened to European Community (EC). With this agreement, the nations consented to remove internal tariffs among member nations and establish a common external tariff for imports into the community within 12 years. Going beyond trade, the treaty also called for future implementation of common policies in virtually all areas of economic and social life. At the same time, the six nations also signed a treaty that created the European Atomic Energy Community (Euratom) to promote and develop the use of nuclear energy for peaceful purposes. Again, many outsiders were skeptical that the Common Market would succeed, believing that the member nations, with their different languages, customs, and currencies, would have difficulty cooperating on such a large scale.

European Free Trade Association (EFTA) 1959

In 1959, as a countermove to the European Community, seven other nations including the United Kingdom, Sweden, Norway, Denmark, Portugal, Austria, and Switzerland formed the European Free Trade Association (EFTA). It too planned to remove tariffs and customs duties among its members, but, unlike the European Community, it sought no common external tariff. EFTA members were often referred to as the "Outer Seven" because they were located on the periphery of the European Community, or "Inner Six" nations.

The Organization of Economic Cooperation and Development (OECD) 1960

The Organization of Economic Cooperation and Development (OECD) is another organization created in 1960 to promote economic progress and world trade. Originally the OECD comprised 18 members, including the EC and

EFTA nations along with the United States and Canada. Australia, New Zealand, and Japan have recently become members.

These industrialized nations not only endeavor to promote economic progress and trade but seek cooperative economic policies. They also publish and exchange information on gross national product (GNP), employment, prices, and other economic data. In addition, they make economic forecasts for each of the nations.

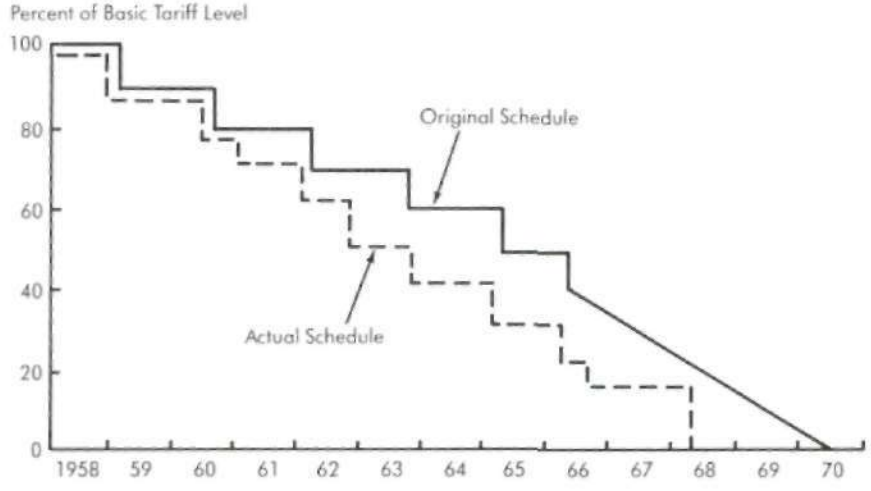
IMPACT OF THE EUROPEAN COMMUNITY

Under the leadership of its original president, Robert Schuman, and others, the European Community proved to be very successful, achieving scheduled reductions of tariffs and eliminating them entirely, as well as establishing a common external tariff, by July 1968, 18 months ahead of the target date. Figures 16-1 and 16-2 show the scheduled and actual tariff reductions.

After the establishment of the Common Market, there was a rash of U.S. private investment in the European Community nations, because many U.S. firms realized that, otherwise, it would be difficult to compete against companies within the European Community, which had no tariff barriers. How would

FIGURE 16-1

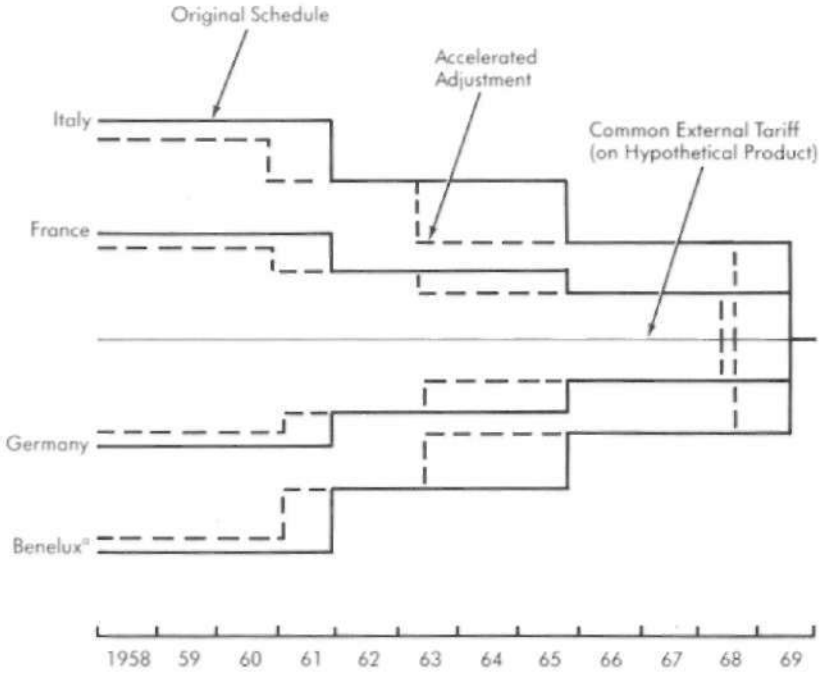
Tariff Reduction Schedule Within the European Community



SOURCE: *The New European Common Market,* Chase Manhattan Bank and *International Commerce* (July 1, 1968).

FIGURE 16-2

Schedule of External Tariff Reductions for the European Community



[a]Benelux is an economic union comprising Belgium, the Netherlands, and Luxembourg.

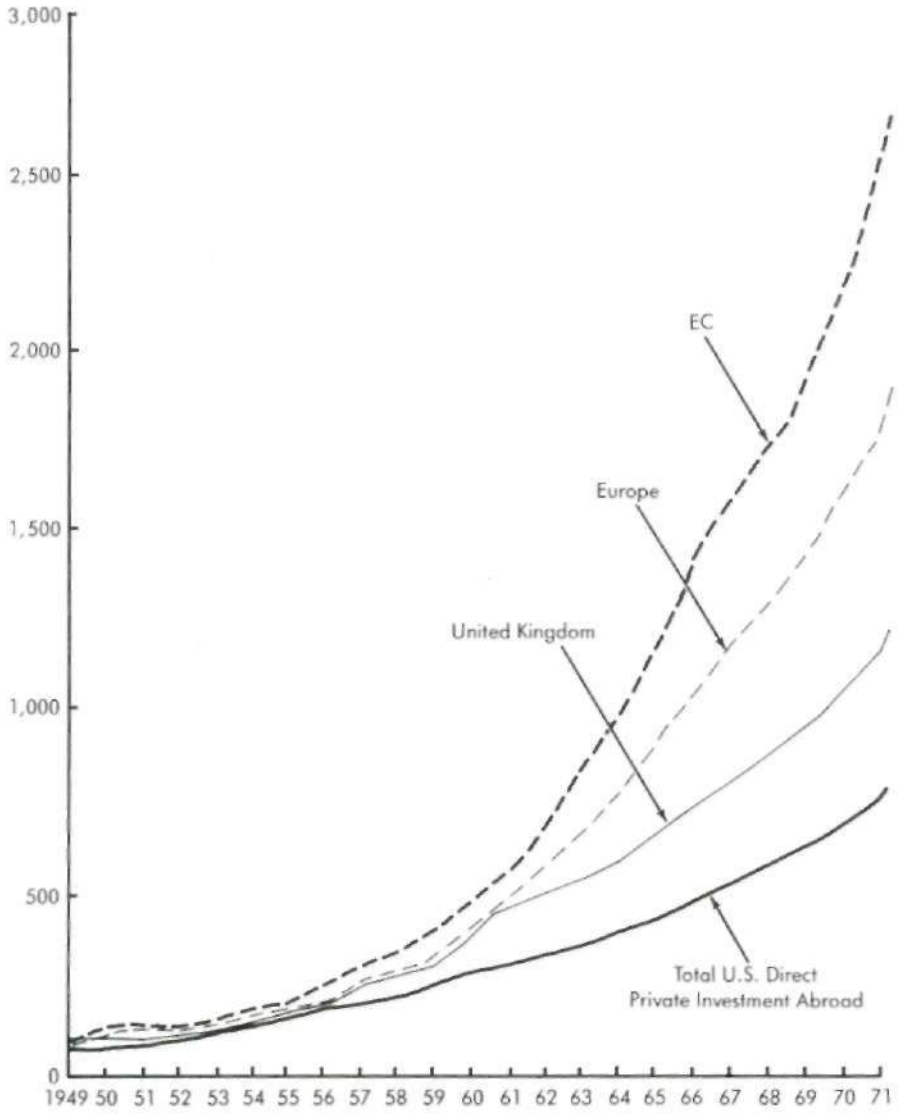
SOURCE: *The New European Common Market,* Chase Manhattan Bank and *International Commerce* (July 1, 1968).

General Motors, for example, compete against Volkswagen selling cars in Rome with no tariff on Volkswagen but one on GM products? American and other non-European businesses also feared that the European Community would maintain or raise tariffs to favor member-country firms. This fear caused many U.S. firms to establish their own plants within the European Community or enter into some type of joint production or licensing arrangement with EC firms. Once a plant location was set, a U.S. firm could sell its products within the European Community without being subjected to the external tariff. Figure 16-3 shows the surge of U.S. investment in the European Community.

The fear of the external tariff was mollified to some extent, however, when the European Community lowered its external tariff as it lowered its internal tariffs. Nevertheless, the formation of the European Community gave

FIGURE 16-3

Growth of United States Direct Private Investment in Europe, the European Community, and the United Kingdom (1949–1971)



SOURCE: *The Survey of Current Business* (August 1975).

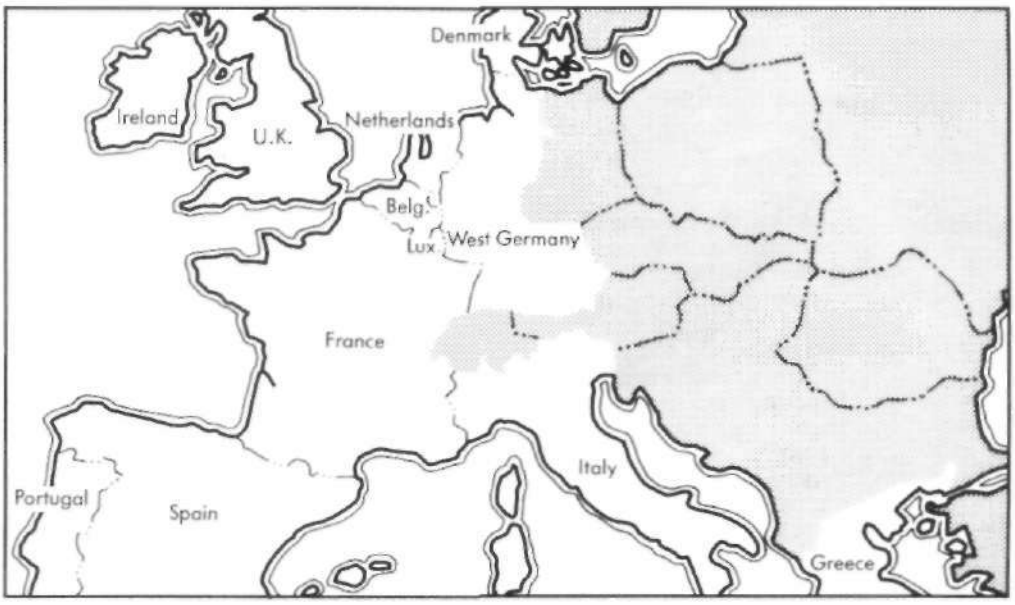
its member nations more clout in the General Agreement on Tariffs and Trade (GATT) negotiations .

When the United Kingdom first sought to enter the European Community during the 1960s, its application was rejected because it still wanted to retain special ties with its Commonwealth nations. Persistence paid off, however, and the U.K. was admitted on January 1, 1973 along with Denmark and Ireland. Greece was admitted in 1981, and Spain and Portugal joined the European Community in 1986, bringing the number of member nations to 12. Figure 16-4 shows the member countries and geographic area of the European Community.

Today the European Community has a total population of more than 320 million, compared to 250 million in the United States. In 1989, its combined GNP of approximately $4.5 billion was equivalent to about 85 percent of the U.S. GNP. (The reader should remember that GNP comparisons will vary with changes in exchange rates.) The European Community encompasses an area of about 870 thousand square miles—not quite one-fourth the area of the United States—and has a population density of 370 persons per square mile, compared to only 66 per square mile in the United States. In terms of

FIGURE 16-4

Geographic Map of the European Community Nations



SOURCE: *The European Community* (1987).

purchasing power, the EC is the world's second largest mass market, after the U.S. Table 16-1 shows some recent economic statistics for the European Community and the United States. The table also shows that there is room for expansion of U.S. exports to the European Community in such major markets as automobiles and televisions.

European Monetary System

The European Community's founders, especially Monet, realized that the creation of a true common market would have to be accompanied by a monetary and economic union. During the 1970s, the EC nations agreed to narrow exchange-rate margins among member currencies and to maintain a fixed rate, within limits, with respect to the U.S. dollar. This arrangement was called the "snake," or the "snake in a tunnel," because the currencies could fluctuate only within limits. The snake, however, collapsed because of its rigidities. The latter 1970s witnessed wild currency fluctuations that impeded trade and discouraged European firms from undertaking investment projects across national borders.

The European Community took a major step toward economic and monetary union when it established the European Monetary System in 1979. The European Monetary System consists of fixed but adjustable exchange rates between the currencies of participating members. The objectives of the European Monetary System were as follows: (1) create a zone of internal monetary

TABLE 16-1

Comparitive Statistics for the European Community and the United States

	European Community	United States
Gross domestic product (GDP), 1986 (in billions of dollars)	$3,331.6	$4,166.8
Civilian labor force, 1985 (in thousands of people)	139,558	117,679
Total farmland, 1985 (in thousands of acres)	327,543	1,015,583
Imports as a percentage of GDP, 1985	9.9%	9.3%
Exports as a percentage of GDP, 1985	10.0%	5.1%
Imports as a percentage of world trade, 1985	19.9%	22.0%
Exports as a percentage of world trade, 1985	19.6%	14.3%
Televisions per 100 persons, 1983	31	64
Telephones per 100 persons, 1983	56	77
Private cars per 100 persons, 1983	32	53

SOURCE: *The European Community* (1987).

stability; (2) improve coordination of national economic policies; (3) boost economic growth and employment within the community; and (4) stabilize European and world currency markets. The EC nations agreed to keep their respective currencies within a specified margin of bilateral central rates for the eight participating currencies. In 1979, a ± 2.25-percent margin was specified, though Italy was permitted a 6-percent margin.

Under this system, known as the Exchange Rate Mechanism (ERM), if the exchange rate between the currencies of any two nations moves outside the specified range, the central banks of both nations are required to intervene, through buying and selling of currencies to bring the exchange rate back within range. The Exchange Rate Mechanism is similar to, but not as rigid as, the earlier "snake." The United Kingdom did not participate in the ERM at the time because of that nation's reluctance to surrender some of its sovereignty in financial matters.

As part of the European Monetary System, the EC nations took another major step toward a common currency when they established the European Currency Unit (ECU) to be used for accounting and balance-of-payments purposes. The ECU is defined as a basket combination of specified amounts of member-nations' currencies, excluding Spain and Portugal. (The currencies of these two countries, later entrants to the EC, were to be added to the ECU by 1990.) The German mark, followed by the French franc and the British pound, have the heaviest weights. Table 16-2 shows the weights of member currencies as of mid-1989.

TABLE 16-2

Weights of EC Currencies in the ECU Basket of Currencies and Value of an ECU in Terms of Other Currencies, 1989

Country	Currency	Weight In Basket	Value of an ECU in Specified Currency
United Kingdom	pound	13.7%	0.64
Denmark	krone	2.7	8.12
France	franc	18.4	7.12
Greece	drachma	0.7	174.06
Ireland	punt	1.1	0.79
Italy	lira	9.2	1,524.85
Netherlands	guilder	10.9	2.36
W. Germany	mark	34.5	2.08
Belgium	franc	8.5	43.52
Luxembourg	franc	0.3	43.52
		100.0%	
United States	dollar	--	1.13

SOURCE: *Europe* (August 1989).

The current market value of the participating currencies determines the current value of an ECU. In mid-1989 an ECU was equivalent to 1.13 U.S. dollars, 2.08 German marks, and 0.64 British pounds. Table 16-2 also shows the values of an ECU in terms of member-nation currencies and the U.S. dollar. The current value of the ECU changes as the values of the member currencies change. For example, in early 1990, the value of an ECU in U.S. dollars had increased to 1.20.

In addition to its use within the European Monetary System, the ECU is increasingly used as a private financial instrument. There are ECU-denominated traveler's checks, bank deposits and loans, and the ECU is beginning to be used as a currency for billing and payment. Large amounts of ECU-denominated bonds have been placed on international markets. The first public offering of these types of bonds was made in the United States in 1984.

The ECU may also be a prelude to a common physical currency that could be carried about and spent in all countries. In fact, Belgium was authorized in 1987 to strike a limited issue of ECU coins. Brussels, Belgium, of course, is the headquarters of the European Community. Another limited issue was struck in 1988. The 50 ECU gold coin contains 0.555 ounce of gold; the 5 ECU silver coin contains 0.735 ounce of silver. The monetary value of the 50 ECU coin in early 1990 was about $60 U.S. dollars (50 x $1.20). It's market value is much higher than its monetary value because it is based on the amount of gold in the coin itself. The coins have legal-tender status in Belgium and are acceptable throughout the European Community. Because of their value in precious metal, people do not actually use them as money. However, they may well be a forerunner to nonprecious-metal coins and currency that would be used as money.

European Community Institutions

The treaties that founded the European Community created institutions that will have the authority to unite Europe. These institutions were given some of the legislative, executive, and judicial authority traditionally exercised by member nations at the national level. The power of European Community bodies to take measures with the force of law distinguishes the community from traditional international organizations.

The *European Parliament*, formed in 1958, is the community's only directly elected body. It currently has 518 members, elected to five-year terms, representing the 12 individual EC countries. Currently France, West Germany, Italy, and the United Kingdom have the strongest influence, with 81 representatives each. Table 16-3 shows representation for other countries.

The European Parliament acts in an advisory capacity and does not have the lawmaking authority usually associated with national parliaments, such as the Canadian Parliament. It does, however, have final approval over the EC

TABLE 16-3

Representatives to the European Parliament, 1990

Country	Representatives
France	81
W. Germany	81
Italy	81
U.K.	81
Spain	60
Netherlands	25
Belgium	24
Greece	24
Portugal	24
Denmark	16
Ireland	15
Luxembourg	6

budget. Its members debate issues, scrutinize commission proposals, and make recommendations to the council. The parliament's power to influence certain council decisions was increased by the Single European Act, which is discussed later in this chapter. The parliament has 18 separate committees that study, analyze, and make recommendations to the council on various proposals that come before it. These committees cover such diverse matters as agriculture, employment, legal rights, transportation, and women's rights.

The *Commission* proposes legislation, implements EC policy, and enforces EC treaties. It is composed of 17 members—two each from the United Kingdom, France, West Germany, Italy, and Spain and one from each of the other member countries—who are appointed by unanimous agreement of the EC nations. The Commission acts in the interest of the EC rather than that of the national governments. It has a staff of 11,000 people working in its various agencies.

The *Council of Ministers* consists of representatives from the various member governments. The council acts on Commission proposals and is the final EC decision-making body. It is composed of ministers from each of the 12 member countries. Participants vary; each nation normally sends a different minister depending on the subject of the meeting. Sometimes the foreign ministers attend. At other times the ministers of agriculture, transportation, finance, social affairs, or environment serve as delegates depending on the subject matter of the meeting.

Finance ministers, for example, meet occasionally to discuss exchange-rate fluctuations, money supply, and world interest rates. Preparing for 1992, the ministers of education from the 12 member nations met in Brussels in 1989 and approved a $220 million, five-year language-instruction program called

Lingua. The ministers felt that public ignorance of one another's languages was one of the biggest barriers to trade, business expansion, and the free flow of people and ideas across Western Europe.

A third important institution is the *Court of Justice*, which is the EC's Supreme Court. The Court of Justice has the responsibility of insuring that various community treaties are upheld and that related legislation is properly interpreted and observed. The court also endeavors to resolve disputes among the EC countries. Through its judgments, the court is helping to create a body of EC law that will affect the daily lives of Europeans. For example, the court has upheld treaty provisions concerning the right of certain professions to practice freely throughout the community.

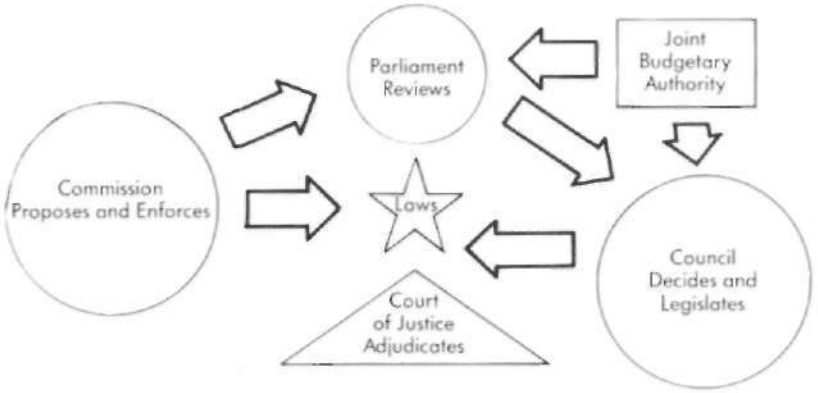
The *Joint Budgetary Authority* manages the community's budget. The EC budget, about 40 billion ECU annually, is financed by revenues from customs duties and a portion of the value added tax (VAT) collected by member nations. There is also a Council of Auditors, which supervises community expenditures. The European Investment Bank provides public and private loans for poorer regions of the community. Figure 16-5 shows the institutional structure of the European Community.

SINGLE EUROPEAN ACT (1986)

Although tariffs between EC members were eliminated by 1968, many other barriers to free trade within the European Community existed after that time.

FIGURE 16-5

European Community Executive, Judicial, and Legislative Institutions



SOURCE: *The European Community* (1987).

Transportation and trade, for example, were often stifled by long delays for customs and administrative clearances at border crossings. In spite of substantial improvements in 1988, it still takes truckers 36 hours to complete the 750 mile (exclusive of channel crossing) trip from London to Milan, Italy, because of delays at border crossings. That delay translates into an average travel speed of 21 miles per hour.

Free trade was also hampered by differing technical standards for products and by regulations regarding the effect of products on health, safety, and the environment. In addition, various member nations often limited bidding on government contracts and projects to domestic firms. Worker mobility was restricted because members of many professions could not work in other member nations because of differing national qualification standards. The variable treatment and regulation of visiting workers often brought negative reaction from labor unions. Differing value added and excise taxes and tax rates tended to distort trade and required maintenance of the border customs checks.

Legal issues can also be a hindrance to trade. Differing antitrust laws caused uncertainties regarding market share, acquisitions, and mergers. Lastly, cross-border flows of capital were restricted, as was the ability to provide banking, financial, and insurance services.

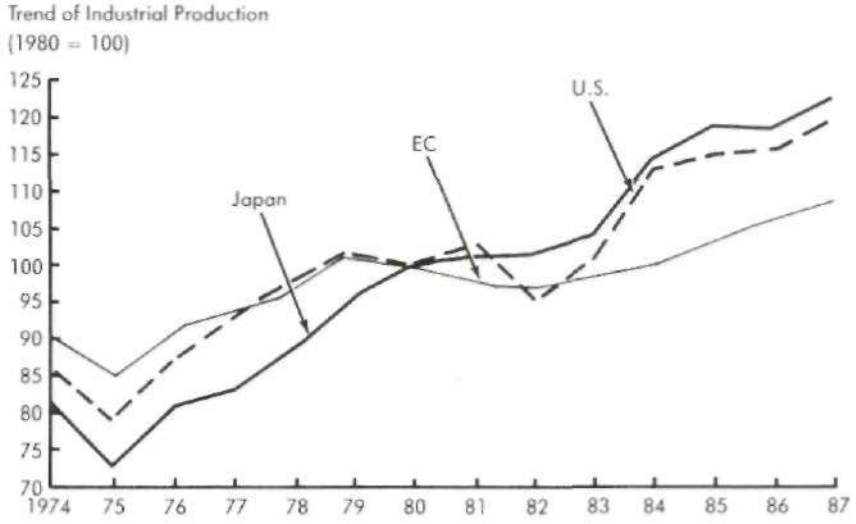
As the European Community became more successful, more nations entered. Even so, economic growth since the 1982 recession has not been as robust in Europe as in the United States or Japan (see Figure 16-6). In short, the European Community was losing ground to the United States and Japan in global competition. Consequently, the member nations charged the commission to study and analyze the feasibility of removing existing physical, technical, and fiscal barriers to free trade within the community. In June 1985, the commission issued a white paper entitled "Completing the Internal Market," which outlined a strategy for creating a true common market by 1992. It recommended some 300 legislative proposals and directives for the removal of barriers including (1) an end to border customs controls; (2) adoption of common technical standards and regulations; (3) mutual recognition of university degrees and apprenticeship programs; (4) a common market in services; and (5) harmonization of taxes and tax rates. The white paper became the basis for the Single European Act.

In February 1986, the EC nations signed the Single European Act, which became effective in July 1987. The act provides that only a majority, rather than unanimous, vote of the Council of Ministers is necessary for many of the decisions needed to complete the single market. The act also gives the European Parliament more authority.

The target date for establishing a single Europe is the end of 1992. By January 1989, about one-half of the white paper's internal market proposals and directives had been adopted. Perhaps the most notable step is the EC

FIGURE 16-6

Growth of Industrial Production in the European Community, Japan, and the United States



SOURCE: *European Files: A Community of Twelve* (March 1989).

requiring all member nations to remove all remaining restrictions on the movement of capital within the community.

Objectives of the Single European Act

The objectives of the Single European Act can be summarized as follows:

- Removal of all internal border controls, including the elimination of delays at frontiers for customs and administrative purposes.
- Elimination of technical barriers by the adoption of common standards with respect to health, safety, the environment, and consumer protection.
- Opening government contracts and projects to competitive bidding from any firm within the community.
- Mutual recognition of professional qualifications, such as those for doctors, lawyers, accountants, and teachers.
- Harmonization of indirect tax rates including the value added tax (VAT).
- Liberalization of capital movements and financial services within the community.

Problems Hindering Full Adoption of the Single European Act

The road to 1992 is fraught with many bumps and potholes. A Europe truly without borders will require member countries to give up much of their sovereignty. Some nations, particularly the United Kingdom, may be reluctant to do so. Establishing common minimal health, safety, and environmental standards is also a formidable task. Moreover, although work done on government contracts represents 15 percent of the EC's GNP, 98 percent of the contracts are awarded to domestic firms. Opening up competitive bidding to all firms within the EC, also represents a formidable change.

Another source of difficulty is the harmonization of tax rates. Currently, basic VAT rates, for example, vary from 12 percent in Luxembourg and Spain to 25 percent in Ireland. Moreover, rates vary from commodity to commodity. There are higher rates (up to 33.3 percent) on luxury goods and lower rates (down to 0 percent) on necessities such as food and children's clothing. According to the schedule established by the Single European Act, the lower rates will be standardized within a range of 4 percent to 9 percent, and the basic rate will range from 14 to 19 percent. The high rate is subject to abolition by 1992.

In the financial sector some banks will object to competition from out-of-nation banks and larger financial institutions. According to the Single European Act, a bank or financial institution licensed in one country will automatically be allowed to establish branches in other EC countries. Banks will be permitted to provide security-related activities in addition to commercial banking services. The host country will retain primary responsibility for supervision of banks, but eventually, it is hoped that a common set of banking regulations, including minimum capital and reserve requirements will emerge.

There also may be more than expected resistance by workers and their unions to freer mobility within the community, particularly if local workers are displaced, or have more difficulty finding employment, because of an influx of immigrant workers. If national unemployment were to rise as a result, foreign workers also would become a concern of public administrators. Prime Minister Thatcher, for example, does not like the proposed regulation calling for more worker participation in management. Other nations also may be reluctant to surrender much more of their national sovereignty in matters of labor law.

The Madrid Summit

Additional progress toward a single Europe and a common currency was made in July 1989 at the two-day European Community summit conference in Madrid. Representatives at the summit agreed on additional directives for freer movement of goods, services, people, and money but made concessions on the transfer of policy-making powers from national governments to EC institutions.

The summit conference also featured serious discussions about adopting a common currency. British Prime Minister Thatcher finally pledged, in spite of her previous objections, that the United Kingdom would become a full-fledged member of the Exchange-Rate Mechanism, but she made no concessions toward a common currency.

In addition, a three-stage plan was proposed to achieve the final goal of a single Europe with a common physical currency. The first stage was set to begin in July of 1990. The plan calls for a new central bank, or European System of Central Banks. Although some representatives, including French President Mitterrand, German Chancellor Kohl, and European Commission President Delors, sought speedy movement toward the final goals, British Prime Minister Thatcher exercised caution. She stated again that a single Europe could operate with twelve separate currencies and that there was no need for a single currency. Recently, however, former German Chancellor Schmidt stated that "without a common currency the common internal market will remain fiction." Prime Minister Thatcher also argued that there were still many details to be worked out.

Even though the heads of government could not completely agree on a common currency, most members were pleased with the progress made at the meeting. In fact, Delors stated the movement toward a single Europe with a common currency was unstoppable. Another meeting was set tentatively for July 1990, which all of the members, including Thatcher, pledged to attend. A vote on the common currency is expected at that time.

Impact of a Single Europe on European Community Nations

By and large, the move to a single Europe is expected by its proponents to be beneficial to the European Community as a whole, as well as to individual member countries. All EC nations will benefit from the reduction of nontariff trade barriers, the elimination of border controls, and the standardization of health, safety, and environmental regulations. Simpler and faster border crossings will increase the speed and reduce the cost of transportation. Transportation also should be helped by the pending completion of the Eurotunnel between England and France in 1993. Widespread competitive bidding on government contracts will likely produce better service and lower costs. Freer mobility for professional workers will help fill shortages and raise professional standards in some countries.

Harmonizing tax rates will remove the economic disincentives experienced by member nations with the highest tax rates. There will be greater availability of banking and financial services and more cross-border flows of money for lending and savings. The removal of nontariff trade barriers, along with the previous demise of tariffs and the continuation of an external tariff, will make it easier for firms within the European Community to compete with outside firms and imports into the community. In fact, in some respects the

Single European Act may make it easier for EC firms to compete with non-EC firms in other world markets by reducing costs with the EC.

A 1988 study by the European Commission estimated that the macroeconomic effects of the single market would create as many as two million more jobs, reduce consumer prices by 6 percent, and improve the EC's balance of payments. Over a period of five to six years, the microeconomic effects of the single market are expected to increase the EC's gross domestic product by 4.25 percent to 6.50 percent or 170–250 billion ECUs. In 1988 when an ECU was worth $1.25, that amount was equivalent to $213 to $313 billion U.S. dollars. Table 16-4 shows a breakdown of the sources of these gains.

Impact of a Single Europe on the United States

The European Community and the United States account for more than 30 percent of total world trade and 70 percent of the industrialized world's gross domestic product. They are both major forces in the world economic and trading system. The move toward a single Europe provides the United States and other non-European nations with both opportunities and challenges.

The European Community has a population about one-third larger than the United States and is a market with growing purchasing power. Thus, U.S.

TABLE 16-4

Estimates of Potential Economic Gains for the European Community Resulting from Completion of the Internal Market

Gains from:	Billions of ECU[a]	Percent of GDP
Removal of barriers affecting trade	8– 9	0.2–0.3
Removal of barriers affecting overall production	57–71	2.0–2.4
Removing barriers	65–80	2.2–2.7
Exploiting economies of scale more fully	61	2.1
Intensified competition reducing business ineffectiveness and monopoly profits	46	1.6
Market integration	62[b]–107	2.1[b]–3.7
Total gains for 7 member states at 1985 prices	127–187	4.25–6.50
Total gains for 12 member states at 1988 prices	170–250	4.25–6.50

NOTE: All figures except the last line are expressed in 1985 prices and relate to seven member states. The aggregate result is scaled up in terms of the 12 member states' 1988 GDP in the last line. The ranges for certain lines are the result of using alternative sources of information. The detailed figures in the table relate only to the seven member states because the underlying studies mainly covered these countries.

[a]ECU = $1.25 on March 31, 1988.

[b]This alternative estimate for the sum of line 6 cannot be broken down between the two lines 4 and 5.

SOURCE: *European Community News* (April 13, 1988).

business has a strong inducement for retaining favorable trade relations with the European Community. Although the United States had a deficit merchandise trade balance with the EC countries in 1986, it still exported $53.1 billion in goods and services to those nations, accounting for 20 percent of U.S. exports of goods and services. In addition, U.S. firms with subsidiaries in the European Community have about $350 billion in annual sales within the community. Moreover, in 1986, about 18 percent of EC exports went to the United States.

U.S. direct investments in the European Community member countries in 1987 amounted to about $124 billion—a 25-percent increase over 1986. EC investments in the United States exceeded $100 billion. When direct investments, exports, and imports between the EC nations and the United States are considered, it amounts to a trillion-dollar relationship.

The European Community maintains that it does not intend to become "Fortress Europe," as some U.S. businesses and members of Congress fear. However, if it restricts imports in any way, the result could have a substantial negative impact on the United States. Import restrictions could take the form of a higher external tariff, import quotas, preferential treatment to EC firms, or local labor content laws. Such discrimination against non-EC products or nations, or the failure of the United States to match any lower external tariff, could lead to growing protectionism or even a trade war.

Rather than trying to fight EC import restrictions, it seems that U.S. firms could benefit far more from expanding any operations they may already have within the European Community. Other firms may find it advantageous to open up operations behind the external tariff wall within the European Community in the form of investments in their own plants, banks, or other facilities. In fact, a surge of U.S. investments in EC countries may occur over the next few years similar to that which took place in the late 1950s and 1960s, when the European Community was first formulated.

One area of uncertainty in the relationship of the EC to outsiders involves banking and financial services. There has been much debate within the community concerning how foreign banks will be treated. The community has indicated that it will provide access to its financial markets only to foreign banks whose countries provide reciprocal treatment to banks from all EC countries. Thus far, the meaning of such reciprocity has not been clearly defined. It could mean either national treatment or mirror-image treatment. The United States, for example, gives national treatment to foreign banks operating in the United States. That is, all powers granted to U.S. banks are also granted to foreign banks operating in the country. National treatment is nondiscriminatory. Under mirror-image reciprocity, the treatment of U.S. banks operating in the European Community would mirror, or be identical to, the treatment of EC banks operating in the United States.

Because the United States prevents both U.S. and EC banks from branching throughout the United States and from underwriting securities, a mirror-image

approach to reciprocity would prevent U.S. banks operating in an individual EC country from branching throughout the European Community and underwriting securities. Thus, the U.S. banks would be at a competitive disadvantage against EC banks which would be permitted to operate in all EC nations.

In 1988, the European Commission indicated that foreign banks already established within the European Community would be given national reciprocity and treated the same as EC banks. This leaves open the question about whether other U.S. or foreign banks that may wish to engage in operations within the European Community will be given national or mirror-image reciprocity. If given only the latter, it may lead the United States to retaliate in some way or to reconsider its current restrictions on banks' interstate branch operations and the underwriting of securities.

The Bush Administration is contemplating establishing a special agency, either under the Department of Commerce or the State Department, that would be devoted to all aspects of the new Europe. In the meantime, the U.S. Chamber of Commerce has already formed a special "Europe 1992" subcommittee to work with the U.S. Congress and the Bush Administration to insure that the views of the U.S. business community are represented. The subcommittee is headed by Gerald Greenwald, the Chairman of the Chrysler Corporation.

OPEN MARKET OR FORTRESS?

There is real concern about whether a single Europe is going to be an open market or an economic fortress. For example, in October 1989 the European Commission called on its broadcasting industry to reserve the majority of its programming time for works of European origin. The motivation for the directive, according to the commission, was to protect European culture. Western Europe is one of the fastest growing markets for the U.S. television industry and some critics consider the directive an insult to the United States. U.S. Trade Representative Carla Hill called the EC action "blatantly protectionist and unjustifiable" and a violation of GATT agreements designed to liberalize trade among nations. She also stated that the reason given by the commission for the directive was groundless. Hill promised to raise the issue at the next GATT meeting.

Other Americans, including Secretary of Commerce Mosbacher, also expressed concern about the directive. Some people implied that it was "isolationism" and an example of Fortress Europe. In Congress, the Chairman of the House Ways and Means Committee, Rostenkowski, introduced a resolution protesting the action and threatened possible trade retaliation under the 1988 U.S. Trade Act. There was further concern when it was learned that the commission had pledged a large sum of money to subsidize European TV producers and writers.

Does the European Community plan to become a fortress against trade with outside nations? West German Chancellor Kohl states that it is not the goal of the community to tear down internal barriers only to resurrect them externally again. On the other hand, Commission President Delors, while stating that there is no intention to build a Fortress Europe, notes that the European Community is not developing a single market just to turn it over to hungry foreigners. The treatment of the external tariff will go a long way toward answering this issue.

Another important question is: What makes a foreign firm operating in the European Community a European firm and therefore eligible for favorable EC treatment? Some EC nations have a local-content law specifying that for a firm to be considered European it must buy 60 percent of its materials from an EC country. Thus far it is not clear what common criterion the community may adopt for this purpose. In this respect, will a Volkswagen built in the United States be counted as a U.S. or European product? Likewise, is a Honda built in the United States to be treated as a Japanese or U.S. import by EC regulations?

By mid-1989, a single Europe was clearly in sight, and many European and other foreign firms realized the growing importance of 1992 to them. Thousands of U.S. manufacturers, publishers, bankers, accountants, franchisers, and other firms are preparing to start or expand businesses in the new single market. At the present time, there are reported to be over 12,000 European Community bureaucrats in Brussels interacting with tens of thousands more in the 12 individual EC countries. They are all trying to draft hundreds of rules and regulations by the end of 1992. Reports also indicate that an estimated 2,000 lobbyists, including some Americans, representing 3,000 companies, are in Brussels campaigning for increased market share, exclusive product standards, and special trade rules and restrictions.

European Community representatives are also holding talks with other nations, such as the United States, Canada, Australia, Japan, and the Soviet Union, regarding the single market. There also have been meetings with the six members—Austria, Finland, Iceland, Norway, Sweden, and Switzerland—of the European Free Trade Association. An agreement signed in December 1989 gives the six smaller countries a special relationship with the community. The agreement between the EC and the EFTA will establish a free-trade zone that will ease the movement of goods, services, capital, and people between the two groups. Perhaps, someday, there may even be a merger of the EC and the EFTA.

In 1989 the Pacific Rim nations of North and South America, Asia, Australia, and New Zealand met concerning the impact of Europe 1992 on their trade. In addition, Korea, Taiwan, Singapore, and Hong Kong, the so-called Asian Tigers, which all rely heavily on exports, held separate and collective meetings to study the impact of a single European market on their respective economies. Whether the single Europe will become an open market or a fortress, Europe 1992 is still a controversial issue.

The Future

As preparations are made on both sides of the Atlantic, and elsewhere, for 1992, some EC officials and national representatives from member countries are starting to campaign for political as well as economic unity. A few suggest that a single Europe will not be complete without it. Belgian Prime Minister Martens, for example, believes that political unity will become a reality despite

TABLE 16-5

History of the European Community

April 1951	The European Coal and Steel Community (ECSC)—the forerunner of the European Community—is formed by France, West Germany, Italy, Belgium, the Netherlands, and Luxembourg.
March 1957	Treaties are signed by the same six countries, establishing the European Economic Community (later to become known as the EC) and the European Atomic Energy Community (Euratom).
July 1967	Formation of a single European Commission and a single council to serve ECSC, EC, and Euratom.
July 1968	All customs duties are removed for internal-EC trade; a common external tariff is established.
January 1973	Denmark, Ireland, and The United Kingdom join the EC.
March 1972	The "snake" exchange-rate system is established, setting narrow margins for exchange-rate movements among EC currencies, while maintaining fixed, but wider, margins against the dollar.
March 1979	The European Monetary System is established.
June 1979	First direct elections to European Parliament are held.
January 1981	Greece joins the EC.
June 1985	The EC Commission endorses the white paper, "Completing the Internal Market," that outlines a strategy for creating a true common market by 1992.
January 1986	Spain and Portugal join the EC.
February 1986	The Single European Act is signed and the European Parliament is given more authority.
June 1987	Belgium is authorized to strike the first issue of ECU coins.
June 1989	Madrid Summit. The United Kingdom agrees to join the European Monetary System.
December 1992	Scheduled completion of the Internal Market and a single Europe.

the reservations held by some. West German Chancellor Kohl, in a talk about the European Community that he gave in the spring of 1990, called for eventual political unity. Table 16-5 summarizes progress toward a single Europe.

By mid-1989 the EC nations were well into their move toward a single Europe. The uprisings for freedom and democracy in several eastern European nations in the fall of 1989 and early 1990, however, added a new dimension to their plans. As these countries, including Poland, Hungary, and Czechoslovakia, move toward free enterprise and possible removal of trade restrictions, the European Community will feel the impact. Some of these nations will want to trade with EC member countries. How will that be handled? Later on, some of them may even seek EC membership. Will they be admitted?

A further complication is the pending reunification of Germany. The leaders of East and West Germany announced in April 1990 that July 2, 1990 was the target date to achieve economic, social, and political unity. Some nations, however, find it hard to forget the events of World War II. Among others, the United Kingdom, France, the United States, and the Soviet Union initially preferred to move slowly on German reunification. Nevertheless, once the target date for reunification was established, they all supported the action. Reunification will make Germany much stronger in terms of size, population, and economic potential. But questions remain: Will West Germany become more interested in reunification and less concerned about a single Europe? When reunification does occur, what will happen to the status of East Germany? Will it automatically become a member of the EC?

Other questions must also be pondered for the future. If the EC becomes a larger market—as a result of merging with the EFTA, admitting new members, or German reunification—what will be the economic impact on the U.S. and other outside nations? What will happen to the composition and value of the ECU?

CONCLUSION

The first serious attempt at European economic integration came after World War II in 1951 with the formation of the European Coal and Steel Community (ECSC). At that time, six nations, including France, West Germany, Italy, Belgium, the Netherlands, and Luxembourg, agreed to pool and share coal and steel resources.

As a result of the success of the ECSC, the same six nations in 1958 established the European Economic Community, which was later shortened to the European Community (EC). Their treaty called for the reduction and

elimination of internal tariffs among the six nations and the maintenance of a common external tariff on imports. A counter move was taken by seven other nations abutting the European Community, including the United Kingdom, Sweden, Norway, Denmark, Portugal, Austria, and Switzerland, when they formed the European Free Trade Association (EFTA). The European Community had a substantial impact on the United States and a surge of U.S. investment in the European Community occurred as U.S. firms tried to circumvent the external tariff.

Over the years, other nations, including the United Kingdom, Denmark, Ireland, Greece, Portugal, and Spain, have joined the European Community, raising its total membership to 12. The community has a population of more than 320 people and a GNP equivalent to about 85 percent of the U.S. GNP. In terms of purchasing power, the European Community is the second largest mass market in the world, after the United States. The EC has a land area almost one-fourth the size of the United States.

In 1986, the European Community enacted the Single European Act, which called for the removal of all remaining nontariff barriers and other restrictions to free trade within the European Community by 1992. Among other things, the Single European Act called for the removal of border controls, the elimination of technical barriers, the harmonization of indirect tax rates, and the liberalization of restrictions on banking and financial services.

By 1990 the European Community was well on its way toward becoming a single Europe though the uprisings in Eastern Europe for freedom and democracy and the possible reunification of Germany have introduced new challenges. The question remains, however: Will a single Europe be a boon or a bane to the United States?

QUESTIONS FOR DISCUSSION

1. What might prevent the European Community from achieving its goal of a single Europe by 1992?
2. Will the European Community eventually have a common currency? Why? What advantages would a single currency bring?
3. Should the United States encourage the idea of a single Europe? Why or why not?
4. What might cause the European Community to eliminate its external tariff?
5. Will the European Community someday seek political unity?
6. Why might economic integration result in greater U.S. direct investment in the European Community?

7. Why might the EFTA nations seek a merger with, or entry into, the European Community?
8. What has happened to U.S. direct investment in the European Community since the signing of the Single European Act in 1986?
9. How will the removal of trade restrictions within the European Community make it tougher for outside importers to compete?
10. How would the reunification of Germany impact the European Community?

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INDEX