Federal Reserve Bank of Cleveland 1981 Annual Report

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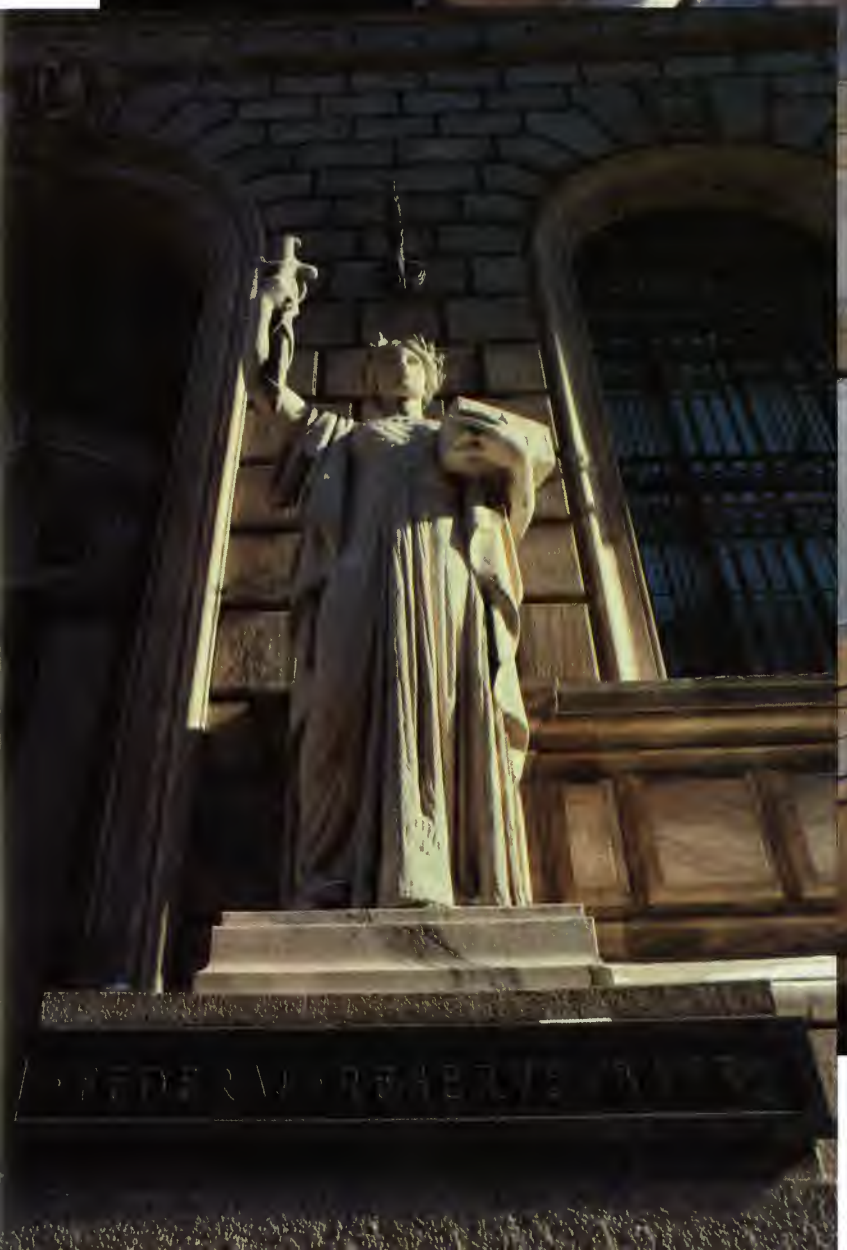
Cover: The bank's Superior Avenue entrance is dominated by a colossal bronze statue, ***Energy in Repose.*** *Sculpted by Henry Hering of New York City, the statue represents the great physical energy that typifies the heavy industry of this district.*

Facing page, top and bottom left: ***Security****, a statue carved by Henry Hering, is one of two that flanks the bank's main entrance on East 6th Street. Bottom right: The Italian Renaissance façade and exterior ornamentation of the bank are made of Etowah Georgia marble, which has a warm pink cast.*




BANK

The President's Foreword

As many of you know, 1982 is the year of my retirement—from the presidency of this bank, from serving on the Federal Open Market Committee, from public life in general. I have reaped many benefits from my eleven years as president of the Federal Reserve Bank of Cleveland, and I have learned much from the many people who have touched my life and my work.

This bank has undergone numerous changes in the past eleven years, as have depository institutions and the economy in general. We at the Federal Reserve Bank of Cleveland have been able to meet the changes, and the challenges therein, because of the diligence of our many capable employees, of whom I am proud and most appreciative. I am also mindful of the continued support of our member banks and the interest of our new constituents from the broader financial community.

Far-reaching changes have occurred in the structure of this nation's financial markets. Statewide banking organizations have been permitted in Ohio since January 1979, and recently enacted legislation indicates similar developments in the other states of the Fourth District. The pace of change has outdistanced the legislative and regulatory framework governing the production of financial services. Markets, once local in orientation, are increasingly linked to developments and forces that are national and international in scope. The thrust of electronic technology is evident everywhere—in wire-transfer systems, automated clearinghouses, and computerized terminals and automatic teller machines backed by centralized data-processing facilities. Money market mutual funds, operating outside the rules that constrain commercial banks and other depository institutions, enable ready access to market-determined interest rates. Credit markets also are under heavy pressure to change. The current problems of the savings and loan industry, for example, will force new approaches to mortgage lending. Many of the changes in financial practices have been piecemeal, and many have been long overdue; indeed, some were being discussed when I came to this bank in 1971.

A number of the changes that have occurred in my presidency have had special significance to the Fourth District. In some cases the significant impacts have been troublesome. Structural changes in economic activity have lessened the region's dependency on manufacturing. Our steel, rubber, and automotive industries have seen their competitive positions erode in a world of global competition and shifting economic activity, depressing economic growth and curtailing employment. Many major industrial facilities that once were headquartered in the district have relocated, and new firms with new products are not being created rapidly enough to revive the district's economy.

Because of the slowdown in the Fourth District's economy, more and more of our residents have migrated to the West and the South, and fewer and fewer new arrivals have come to take their place. Migration patterns reflect not only a desire for greater employment opportunities, but also for less exposure to urban congestion, deteriorating school systems, and crumbling infrastructure. Continued population shifts may add to the burden of supporting the elderly, the less skilled, the less able and may further challenge the capacity of the district to attract new industries and reverse the region's economic decline.

Willis J. Winn

The problems facing the Fourth District are serious, but they are not insurmountable. Several efforts recently have begun to take up the difficult challenge of determining ways and means of attracting new industries, restoring competitive balance in long-established industries, and supporting expansion in those industries that have moved against the tide. At the same time pressing human problems and the problems of urban centers have been addressed more purposefully than they were even a few years ago. I am pleased to have participated in some of these efforts, and while I fully recognize the long road that must be traveled, I am satisfied that a good beginning has been made. Some results are already apparent—the city of Cleveland has been brought back from the brink of financial ruin to a position of greater fiscal stability.

Beyond this, I can see a new spirit of cooperation among the people of the Fourth District—people in business, in labor, in the professions, and in government—that is the essential cornerstone of continued revival. I shall watch these efforts unfold with anticipation of a full blooming of the promise that justifiably has been made.

The state of our educational institutions is a matter of concern to me. In my youth and throughout most of my career, the importance of our educational system was taken for granted. Our expectations were high, and, viewed in any realistic historical perspective, they were well-satisfied. Any serious explanation of the miracle of U.S. economic performance must recognize the skills, ingenuity, and diligence of our populace. Experts may debate the problems of our educational system and their significance, but several things seem obvious to me. Increasing numbers of "graduates" lack basic reading, writing, and mathematical skills. The environments of our inner-city schools do not contribute to learning. Public and private school systems are having serious financial problems. These problems are in one sense a reflection of those of society at large. Yet, more serious to me is the seeming loss of commitment to an educational system that is not merely adequate but top quality. Failure to recognize the overwhelming importance of adequate but efficient investment in human beings will create future problems that eventually will make those of today seem insignificant.

Restructuring in the district's economy, and indeed throughout much of the industrially mature North, represents a composite of long-term forces coming to a head while we are trying to unwind the inflationary spiral that has distorted economic activity nationwide. Two recessions in back-to-back years—unprecedented in business-cycle annals—have exacerbated the longer-term adjustment process. These contractions, serious in themselves, combine with long-term problems to accentuate economic distress in the district. They also can change the focus of policy efforts from the desirable long-term path of transition to a short-term path of quick relief and simplistic solutions. It is always tempting to react to immediate concerns in anticipation that, once they are overcome, the business of achieving long-term objectives can resume without lost ground. This generally is not possible—the effective pursuit of long-term objectives requires constant diligence. Nowhere is this more true than in our efforts to combat the related problems of inflation and slow productivity growth. In the past 15 years, productivity growth has declined from nearly 4 percent per year to less than 0.5 percent per year. Over the same period, the rate of inflation has risen from under 2 percent per year to over 13 percent. Our macroeconomic policies must lay firm groundwork for resolving these issues if the Fourth District and the nation are to move into a new era of prosperity.

Monetary policy is a key component in any anti-inflation strategy, balanced with a sound fiscal policy. The Federal Reserve System is under tremendous pressure to change the course of monetary policy, to adopt a different battle plan. Some would persuade us to abandon the fight against the ever-spiraling inflation rate that has fragmented the American economy, redistributed our income and wealth, and decimated our balance sheets. Yet we do not seek simply recovery from recession, but transition to an economic environment of reduced inflation, higher productivity growth, and a more efficient allocation of resources. It is unlikely that any policy, or combination of policies, can succeed in quickly achieving all of these objectives. We must be willing to take small steps—and have the patience to build on these small, but often catalytic, steps.

Periods of transition are often fragmented, difficult, and painful to those who are enveloped in the day-to-day creation of change. Change does not come about easily, whether in industry or finance, whether in the district or in the nation—perhaps because institutions, like people, seem to find comfort in that which is familiar. Yet change we must—to allow room for growth and opportunity for the new. Out of the fragments of transition, we shall build a more efficient and rational financial structure, a stronger economy, a better nation.

Willis J. Winn
President

March 11, 1982

Fragments of Transition

1981—A Year of Transition

This past year brought frustration and uncertainty about the economy to all Americans as we grappled with the second recession in as many years. Yet, several years from now, 1981 may well be recalled as a great turning point—a time when monetary policy convincingly slowed the rates of money growth and inflation. Many problems that lie ahead—some of which were dimly perceived just one year ago—are now coming into sharper focus. To understand the challenges that these problems pose, we should look closely at the major economic events of 1981.

Many of the economic adjustments now under way derive from the adaptation of the economy to slower rates of money growth and inflation—a transition that is especially painful because of long-standing problems of the American economy. From 1976 to 1979, our real gross national product (GNP) increased on average by 4.5 percent annually, accompanied by a spiraling inflation rate; indeed, the consumer price index increased by 6.8 percent in 1977, 9.0 percent in 1978, and 13.3 percent in 1979. From 1979 to 1981, real growth averaged about 1 percent per year, but the acceleration in inflation essentially ended: consumer prices rose by 12.4 percent in 1980 and 8.9 percent in 1981. By the fourth quarter of 1981, the rate of increase in prices plummeted to 3.2 percent (annual rate). Monetary expansion helped fuel the acceleration of inflation (see charts 1 and 2). The money stock, measured by M-1, which rose by 4.8 percent in 1974 and 5.0 percent in 1975, increased sharply to 8.2 percent in 1977 and 1978.[1] Similarly, the reduction in money-supply growth since then has been a powerful factor in damping inflation.

Monetary Policy in 1981

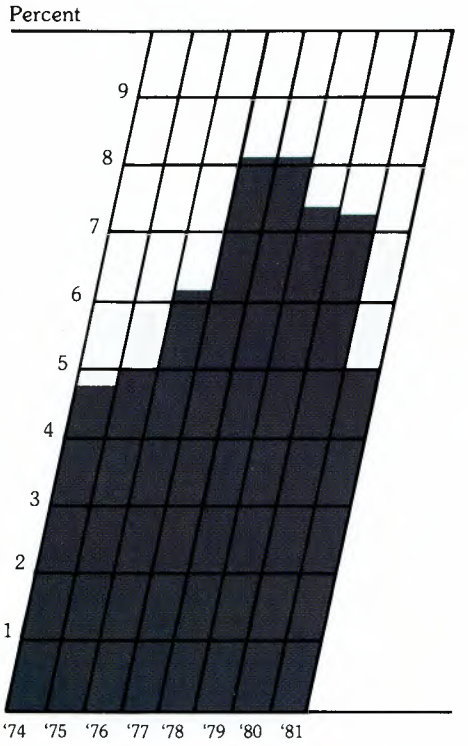
In 1981 the Federal Reserve continued the deceleration of money-supply growth that it began two years earlier. The Federal Open Market Committee (FOMC) of the Federal Reserve System targeted an increase of 3.5 percent to 6.0 percent in M-1 growth for 1981, after allowing for the shifts in funds associated with the nationwide introduction of negotiable order of withdrawal (NOW) accounts. At the same time, the Reagan administration announced its firm commitment to a gradual slowing in the growth of money and credit. The year thus began with a reassuring policy consensus on the importance of continued reduction in money-supply growth, a consensus that lent credibility to monetary policy for 1981.

The actual growth of M-1 as reported between the fourth quarters of 1980 and 1981 was about 5.0 percent. After allowing for the NOW-account-related shifts of funds from savings accounts and other sources into checkable deposits, M-1 rose by about 2.3 percent in 1981, slightly less than the lower bound of the target range. The broader M-2 aggregate rose by 9.5 percent, somewhat above the upper end of its prescribed 6.0 percent to 9.0 percent target path.

The general level of interest rates must necessarily be high when the underlying rate of inflation is high and expected to remain so. In the money markets, however, short-run influences have pronounced effects. Both interest rates and money-supply growth behaved unevenly in 1981. A shortfall from the M-1 target—three months of slow growth—was followed by a resumption of more rapid money-

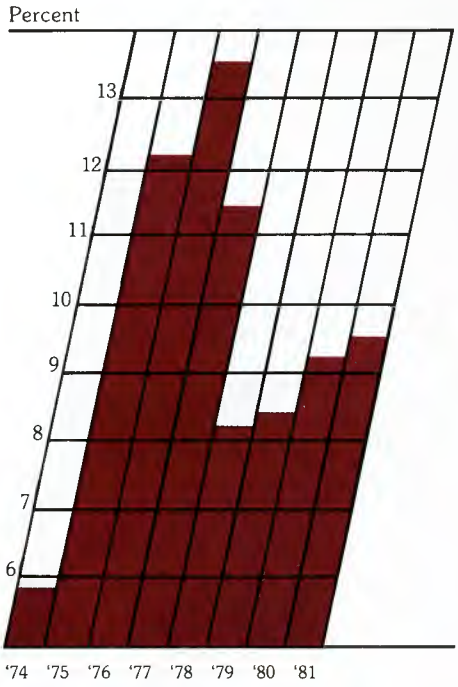
1. Rates of growth are computed fourth quarter over fourth quarter. The M-1 aggregate refers to the measure known as M-1B in 1980 and 1981; the aggregate includes currency, demand deposits at commercial banks, travelers' checks, and other checkable deposits such as negotiable order of withdrawal accounts, automatic transfer service accounts, and credit union share draft balances.

Chart 1 Money Growth: M-1



SOURCE: Board of Governors of the Federal Reserve System.

Chart 2 Money Growth: M-2



SOURCE: Board of Governors of the Federal Reserve System.

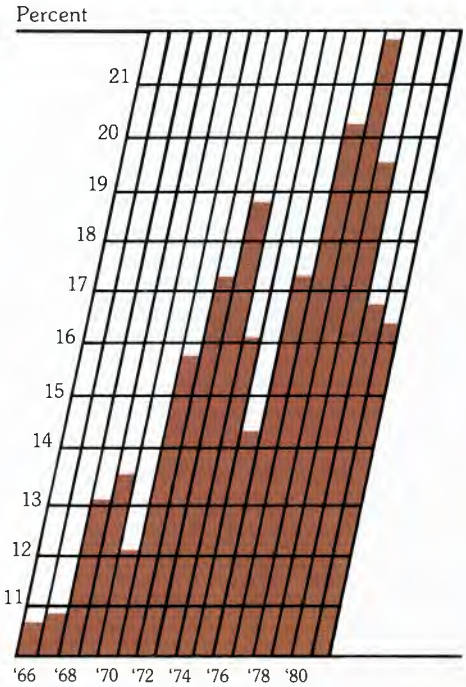
supply expansion in the second quarter. Interest rates fell initially, as the decline in shift-adjusted M-1 necessitated a reduction in discount-window borrowing. As money-supply growth accelerated in March and April, it became increasingly apparent that effective growth of the narrow M-1 aggregate was understated. Cash-management innovations—particularly increased use of money market mutual funds and overnight repurchase agreements (RPs) for transactions balances—enabled more efficient use of money as conventionally measured. Furthermore, rapid expansion in the M-1 aggregate was accompanied by acceleration in the growth of M-2, which carried that aggregate above the upper bound of its target range. The reserve paths set under the money-control procedure began to constrain the growth of reserves, and interest rates rose, quickly regaining the peak levels reached at the beginning of the year.

In its mid-year reconsideration of 1981 money targets, the FOMC took into account the effects of cash-management innovations by indicating that it found M-1 growth near the 3.5 percent lower end of the target range appropriate. At the same time, the economy had slowed considerably from its rapid first-quarter advance, and M-1 began to fall below the lower end of the target range. Starting in July, higher short-run money-growth targets were adopted to achieve the year-end objective of 3.5 percent. Money-supply growth began to accelerate in October, and by year-end the M-1 aggregate was close to its target range.

As was stated in this bank's *1980 Annual Report*, money-supply growth during short periods of time is influenced by many developments, often temporary in character. Changes in money-control procedures might well help smooth short-term fluctuations in money, but such gains probably are not large. Also noted in this bank's *1980 Annual Report* was our belief that improvement of the control procedures was appropriate. While we take no pride in the unevenness in money-supply growth in 1981—or in the accompanying financial-market fluctuations—we would like to note that there were no large sustained deviations from the target ranges. The procedures operated throughout the year both to cushion shortfalls and to limit overshoots when they developed.

The economy was vulnerable to reduced money growth, stemming from a sharp increase in the use of credit in the 1970s—both absolutely and relative to total spending. Total funds raised in U.S. credit markets averaged about 15 percent of GNP in the first half of the 1970s and nearly 20 percent in the late 1970s (see chart 3). The correction of this trend has been slow and is still incomplete, although significant progress has been made. Total credit extended in the last two years declined to 16.5 percent of GNP on average, as high interest rates limited the demand for borrowed funds. An important part of this development was the changing attitude toward debt usage by consumers to a more conservative, more realistic base than shown in the 1970s.

Chart 3 Credit Market Borrowing and GNP



SOURCE: Board of Governors of the Federal Reserve System.

Grocery stores deposit food coupons with their banks, which in turn deposit them with the Federal Reserve. After the coupons are verified, the depositing bank's reserve account is credited, and the U.S. Treasurer's general account is charged.

Adapting to reduced money growth is made difficult by some long-standing imbalances in our economy. More than a decade of persistent and generally accelerating inflation—and the expectation of more to come—altered the spending and saving habits of households, businesses, and governments. Fundamental changes in energy markets and prices contributed to these problems by necessitating difficult adjustments in consumption and in the capital stock. Productivity growth has virtually ceased, making noninflationary real output growth increasingly more difficult to achieve (see Part II of this report for a detailed discussion of productivity growth).

The 1981-82 Recession

By the third quarter of 1981, the economy again had slipped into recession, compounding the pain of correcting inflation and long-standing economic imbalances with short-run slack. The 1981-82 recession does not seem unusual when measured against past recessions. It seems reasonable to expect the declines in production and employment, from peak to trough, to be comparable with, or perhaps slightly more severe than, post-World War II recessions on average. In brief, this would mean a decline in real GNP between 2.5 percent and 3.0 percent from peak to trough. We should not, however, ignore several peculiarities of the current recession—the second recession in two years. The level of real GNP prior to the recession was not significantly higher than prior to the 1980 recession. Consequently, it represents a significant failure to reestablish sustained noninflationary growth. Moreover, financial and regional conditions accompanying this recession differ from those of past experiences.

Financial strains and illiquidity are typical features of recession. Some strains are perhaps more severe in the current episode, and others less; while some relief may lie ahead, financial strains are likely to persist throughout this year and into the next. Corporate liquidity has been seriously eroded, both by the current recession and by the growing reliance on short-term debt that began in the late 1970s.

The agricultural sector currently is experiencing a level of financial distress that is perhaps more severe than at any time since World War II. Lower farm-product prices, rising production

This gilt sheaf of wheat ornaments the ceiling of the bank's main lobby.

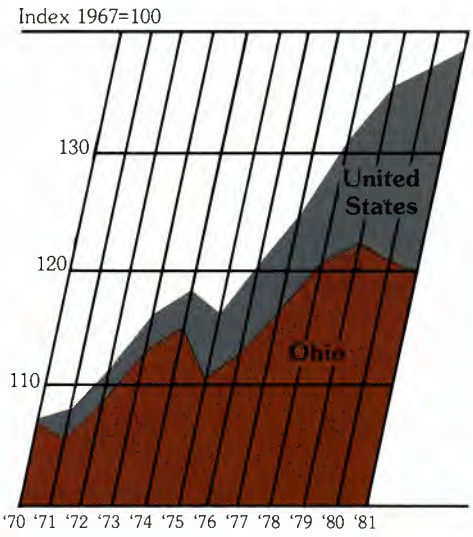
costs, and weakened demand in both domestic and export markets have cut net farm income in half in real terms since 1979. Land prices and farm asset values not only have stopped rising but currently are substantially below levels of recent years.

In the consumer sector flow-of-funds information suggests an improvement in consumer balance-sheet conditions over the past year— an improvement that stems almost entirely from a sharp retrenchment in the use of credit. Although this improvement is one of the bright spots of the current situation, consumer asset holdings probably have become less liquid, particularly because of the disruption in housing markets.

Thrift institutions caught with asset portfolios of low-yielding mortgages are experiencing severe operating losses. Declining net worth of such institutions has resulted in a wave of reorganizations and mergers. These problems are not likely to disappear unless interest rates decline significantly, and there are few convincing signs of such a decline. Historically, residential construction has been a highly cyclical sector. Housing expenditures declined sharply from 4.1 percent of GNP in 1978 to only 2.8 percent in 1981. Not only are housing markets very weak, but there is ample reason to believe that the decline in prices of existing homes has been far more pronounced than conventional measures indicate. Strong competition in the capital markets for savings, the deterioration in the financial condition of the traditional mortgage lenders, and the changing role of housing as an asset all suggest that the housing sector is not likely to rebound as strongly as it normally has in past recoveries.

Another unusual aspect of the 1981-82 recession is that it is interwoven with increasingly serious structural problems in many once flourishing industries and regions of the country. These problems and the adjustments to them are far more than cyclical in character, and they will not end with the recession. A growing number of important industries face mounting competitive pressures, as foreign competition and disproportionate increases in domestic wages and costs have made many facilities marginal. The Fourth Federal Reserve District is replete with examples of such painful adjustments and dislocations. Plant closings and shifts in the loci of production facilities have become commonplace throughout the district's steel, automobile, and rubber industries. For more than a decade, employment growth in Ohio has fallen significantly behind national growth (see chart 4), and unemployment

Chart 4 Total Employment, United States and Ohio



SOURCE: Bureau of Labor Statistics.

rates are roughly one-half again higher than the national average. Weak labor markets and growing recognition of the need to re-establish a competitive position in large manufacturing industries (such as automobiles) have prompted substantial changes in labor contracts—explicit and implicit—between employers and employees. Whether the changing attitudes evident in labor-management relations will contribute to a reduction in inflation and a restoration of competitive advantage for facilities in this region is still an open question. Even if lower labor costs stanch dislocations in production, some industries will be relatively smaller in the 1980s than they were in the 1970s. In short, the 1980 and 1981-82 recessions have intensified structural adjustments that either were inevitable or already under way.

Fiscal Policy in 1981

Another important aspect of the current economy is the dramatic shift in federal fiscal objectives in 1981. While it is difficult to put these fiscal changes into perspective, we shall identify three separate but related objectives in the fiscal package. The first is a serious effort to alter long-established trends in the federal budget by reducing the size of the overall federal sector relative to the private economy. A second thrust is to shift resources away from rapidly growing civilian programs toward national defense. These far-reaching fiscal changes coincide with a third set of actions designed to encourage private savings and investment to help restore productivity growth; these actions collectively will be labeled "tax reductions."

The schedule of tax reductions enacted in 1981 will continue to come into play this year and next. Lower personal tax rates increase disposable personal income. More favorable tax treatment of income from retirement plans and capital gains is designed to shift income from consumption toward saving. A liberalized capital depreciation schedule and investment tax-credit incentives already are operating to increase corporate cash flow and ultimately to expand business saving. Over time, these tax changes can help shift the economy toward improved saving and investment, and thereby help provide a base for noninflationary economic growth. Although the changes in fiscal policy include strong incentives for such a shift, transitions of this sort are extremely difficult to accomplish and require time and patience. And, of course, there are limits to what fiscal change can accomplish.

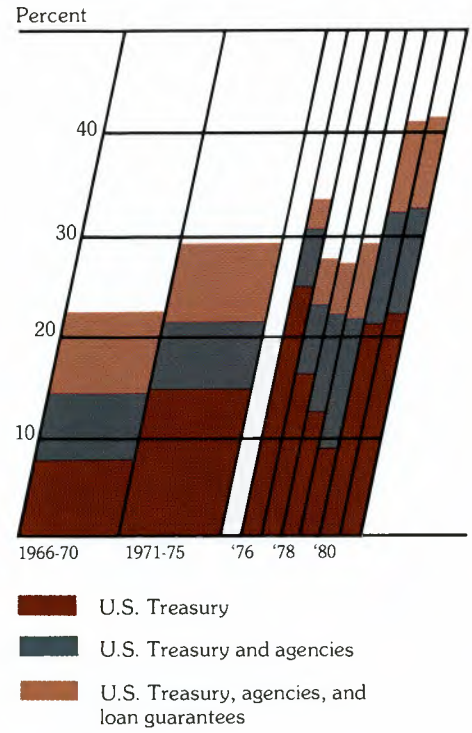
The 1981-82 recession has greatly complicated the fiscal situation. Recessions enlarge deficits, because tax revenues fall and outlays rise in response to higher unemployment. The deficit now expected for the current fiscal year will be significantly larger than last year's, which is probably desirable. The deficit will act to cushion the economy as it declines. The tax reductions scheduled for July will enlarge disposable incomes and help spur recovery from the recession.

The deficits that loom large for 1983 and beyond, however, must be dealt with, as they threaten our hard-won reduction in inflation. The deficits suggest such large federal demands for funds in the capital markets as to impede private investment and a healthy flow of saving into housing and consumer durable-goods purchases. Such strains are not new in the capital markets. The reduction in the growth of money and credit in 1980 and 1981 was accompanied by a sharp increase in the credit demands of the federal government (see chart 5). Indeed, government-related borrowing accounted for about 42 percent of total credit-market borrowing in 1981.

The preoccupation of capital markets with the U.S. Treasury's current and prospective large borrowing requirements kept capital-market interest rates at record-high levels throughout 1981. Between September and December, three-month Treasury bill rates declined by 4 percentage points, and commercial paper rates by nearly 5 percentage points; Aaa bond rates declined by only 2 percentage points. Moreover, even that modest decline resulted in a prompt response—a surge in the volume of long-term financing sought by corporate borrowers. Thus, there is little evidence in the structure of interest rates to indicate that bond-market participants expect the reduction in the rate of inflation to be permanent. Until expectations of future inflation improve, investors will require a very large inflation premium, and firms will be forced to rely on short-term borrowing despite a record-high ratio of short-term to long-term debt.

Looking beyond the recession, continued strong demands for funds by the federal government would collide with the credit demands generated by recovery in housing, consumer durables, and business investment and the need to restructure balance

Chart 5 Government Borrowing and Total Nonfinancial Borrowing



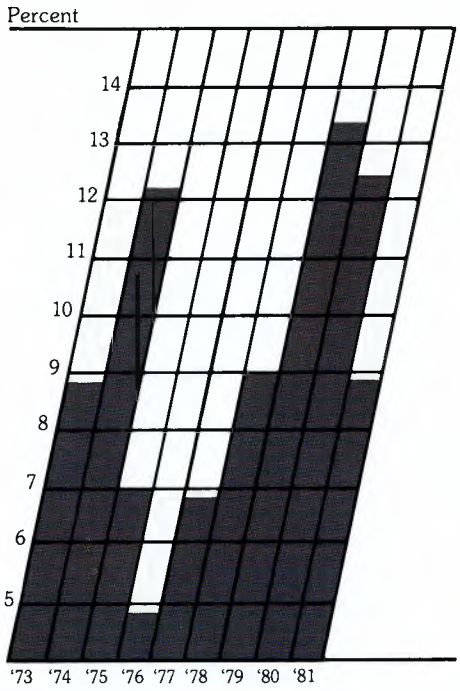
SOURCES: Board of Governors of the Federal Reserve System and Office of Management and Budget.

sheets. Unless there is an implausibly large increase in private saving (an issue discussed in Part II of this report), strong competition for funds could hold interest rates high enough to price interest-rate-sensitive private borrowers out of the credit market. The fiscal incentives are unlikely to work well if they must be financed through government borrowing in the capital markets. An alternative is some adjustment to the fiscal changes introduced in 1981. Another may be failure to carry through on the disinflation program.

These are difficult issues to face. They are more difficult today, because economic policy has tried to deal with them before—and failed. During the late 1960s and again in the 1973–74 period, economic policy attempted to bring down the rate of inflation (see chart 6). In each instance inflation was reduced, but not without recession; and with recession economic policy became less concerned with achieving further reductions in inflation, or even in consolidating the progress that had been made. Eventually, even higher inflation and worse economic conditions resulted. These earlier failures explain the skepticism and uncertainty toward monetary and fiscal policies that seem to prevail today.

Although inflation has begun to subside, there is great uncertainty regarding the permanence of this achievement. Sensible fiscal and monetary policies will be required to consolidate the gains of 1981. Otherwise, the current easing in price pressures will prove again to be only temporary—the consequence of a slack economy. The budget projections for the years beyond the recession do little to strengthen confidence or to suggest that this reduction in inflation will endure. Because there is little inclination today to recognize the progress that we have made, long-term interest rates have not begun to incorporate expectations of lower inflation in the future.

Chart 6 Changes in Consumer Prices
December over December percent change



SOURCE: *Economic Report of the President*, U.S. Government Printing Office, 1981.

This pattern of interest rates is extraordinary for a recession economy. Concerns about large and prospectively larger federal budget deficits are a partial explanation. Doubts about future inflation, occasioned by past failures to achieve an enduring reduction in inflation, also are playing an important role in sustaining long-term interest rates. The reluctance in financial markets to recognize the progress made in reducing growth of money and credit and in bringing down inflation stems from an unwillingness to believe that this progress will persist.

More immediately, high interest rates create doubt about the ability of the economy to recover from the current recession. Industries, financial markets, and regions with particular sensitivity to interest rates are likely to continue to bear a disproportionate share of the burden of reducing inflation. This leads to suggestion that the Federal Reserve abandon plans for gradual deceleration of the rate of money growth during the next few years. In 1980, M-1 targets called for growth ranging from 4.0 percent to 6.5 percent; in 1981 the targets ranged from 3.5 percent to 6.0 percent. The target ranges announced for 1982 call for an increase in M-1 from 2.5 percent to 5.5 percent. Until a less inflationary future becomes more certain, interest rates are unlikely to decline significantly. Past experience clearly indicates, however, that rapid money growth is ultimately inflationary and incompatible with prolonged stable economic growth. The American people's expectations of inflation and real growth will improve only if there is some reason to believe that the Federal Reserve will persevere during and beyond the current recession. This is especially true in an environment where productivity growth is depressed and unlikely to rebound until longer-term commitments hold firm.

The bank receives coins every day from depository institutions. The coins are weighed and dumped into open bins, each holding as much as $25,000. The coins then are wrapped, packaged, and sent to depository institutions.

Productivity and Capital Formation

A basic problem obscuring longer-term policy objectives is the slowdown in productivity growth. Productivity is a thorny issue, not only because of the implications of unchecked declines on future economic activity but because the dimensions of the problem are elusive. The simplest task of measuring productivity growth with reasonable accuracy poses many pitfalls. Different researchers use different definitions of output and input to determine productivity. It is not clear how some outputs, like services, can be identified independently of hours worked by the provider of the service or, in general, how factor returns are best described in relation to factor contributions to output. There is even dispute over which factors ought to be included in productivity calculations. Most productivity measures reduce to a relationship between gross output and hours worked. An example of such a measure is the productivity index computed by the Bureau of Labor Statistics (BLS), which relates gross domestic product (GDP) in 1972 dollars to total employee hours (see table 1).

Productivity Growth

Growth rates computed from the BLS index establish a rough-and-ready postwar history of productivity change in the United States, presented here in two formats. One follows productivity growth through overlapping five-year intervals; the other follows productivity growth through years where capacity utilization is high at the beginning and end of each period. Productivity growth increased in the late-1950s and early-1960s, sagged in the late-1960s and early 1970s, and collapsed in the late 1970s. Productivity growth in private nonfarm business peaked at about 3.8 percent per year in the period 1961–66, slowed significantly between 1966 and 1976, and was nearly zero in the period 1976–81. Productivity growth in manufacturing followed the same general course. Because of cyclical variation in productivity associated with changes in capacity utilization, comparisons unadjusted for the influence of cycles can be misleading. When

Table 1 Productivity Index
Average annual rates of change

	Private nonfarm business	Manufacturing
Intervals		
1951–56	2.1%	1.9%
1956–61	2.4	2.0
1961–66	3.8	4.7
1966–71	1.7	2.1
1971–76	1.5	2.5
1976–81	0.2	0.8
High-utilization years		
1956–64	3.2%	3.7%
1964–69	2.3	2.0
1969–73	2.0	3.5
1973–79	0.6	1.4

SOURCES: Bureau of Labor Statistics, *Handbook of Labor Statistics*, 1978 (table 79); and Bureau of Labor Statistics, *Employment and Earnings*, January 1982 (table C-10).

growth rates are computed between years of high utilization (to minimize the effects of the business cycle), peak productivity growth in the late-1950s and early-1960s is still apparent in both private nonfarm business and manufacturing, as is the productivity collapse in the late-1970s. The slowdown between the peak and collapse is less perceptible, and, indeed, high productivity growth reappeared in manufacturing in 1969–73.

Other efforts to measure productivity growth suggest the same pattern as shown here. A gradual productivity slowdown probably began in the mid-1960s, though it was not uniform across sectors. Manufacturing, for example, experienced a rebound in productivity growth in 1969–73. After 1973, the collapse in productivity is clear-cut and striking, especially because wide-ranging research efforts to explain the rapid deterioration in productivity largely have been unsuccessful. Easy answers, such as failure to overcome measurement problems, are difficult to support, because there is little indication that measurement became especially troublesome within the past ten years. Similar objections apply to the explanation of industrial change—the shift in economic activity from *high-productivity sectors* (manufacturing) to *low-productivity sectors* (services)—as this shift did not accelerate in the 1970s. When the menu of possible determinants is expanded to include changes in resource allocation, changes in the quality of labor inputs, changes in government regulation and others, the net effect may be adequate to account for gradual decay in productivity growth, but not for the collapse in productivity in the 1970s. Pieces of the puzzle have been found, but the complete picture is unclear.[2]

Straightforward investigations of the productivity problem seek the answer in a failure of the mechanisms that, in the past, have supported productivity growth. These mechanisms are the amount of capital available relative to labor and technological innovation. Capital formation is perhaps the most singular feature of America's rise from frontier society to economic giant. Rough measures of capital suggest the real business capital stock increased about ten times from the end of the Civil War to the eve of the Great Depression. In the mature industrial economy, from 1929 to 1979, real business capital expanded more than three times again. By 1979, the gross accumulation of real business capital was nearly $2 trillion (1972 dollars), larger by one-third than the year's output of goods and services. The net (fully depreciated) real business capital stock was about four-fifths as large as GNP.[3]

Table 2 Index of Real Net Capital Stock per Hour Worked
Average annual rates of change

	Private nonfarm business	Manufacturing
Intervals		
1951–56	3.2%	2.8%
1956–61	3.9	2.8
1961–66	2.6	0.0
1966–71	4.4	5.6
1971–76	2.1	2.9
1976–81	NA	NA
High-utilization years		
1956–64	3.5%	1.6%
1964–69	3.6	2.4
1969–73	2.7	2.5
1973–79	1.3	3.5

SOURCES: Bureau of Labor Statistics, *Handbook of Labor Statistics*, 1978 (table 79); Bureau of Labor Statistics, *Employment and Earnings*, January 1982 (table C-10); and John C. Musgrave, "Fixed Capital Stock in the United States: Revised Estimates," *Survey of Current Business*, February 1981 (table 4).

For productivity, capital is important relative to labor. As workers have more and better tools to work with, productivity rises. An index of capital relative to labor can be constructed in a fashion similar to the BLS productivity index. Growth rates of this index provide rough measures of capital's contribution to productivity (see table 2). The history charted by the capital-

2. There are many recent studies of the productivity slowdown. Of these, perhaps the broadest in scope is Edward F. Denison, *Accounting for Slower Economic Growth: The United States in the 1970s* (Brookings Institution, 1979). Denison evaluates a number of factors that may contribute to the sharper decline in productivity growth beginning in 1973 and concludes that "what happened is, to be blunt, a mystery" (p. 4).

3. Estimates of the capital stock in the United States from 1925 may be found in John C. Musgrave, "Fixed Capital Stock in the United States: Revised Estimates," *Survey of Current Business* (February 1981), pp. 57–68. Historical statistics on capital may be found in *Historical Statistics of the United States*, Part 1 (Bureau of the Census, 1975), Series F446–469.

labor index provides few clues to the productivity problem. It may even introduce new mysteries. The rapid growth of manufacturing productivity in the period 1961–66 occurred despite a flat capital-labor index (capital and labor hours both increased at about 4 percent per year). In the 1973–79 period, when productivity growth collapsed, the annual growth rate of the capital-labor index did fall sharply in the nonfarm business sector. In manufacturing, however, the capital-labor index increased at a rapid rate. The capital component of the manufacturing index expanded by about 4.2 percent per year between 1973 and 1979, while labor hours rose by only 0.7 percent per year. (GDP in manufacturing grew by about 2.1 percent per year over the period.) Other studies using more sophisticated techniques to assess capital's contribution also find that capital may be a part of the problem, but it does not account for the productivity collapse.[4]

Technological advance, like capital, has been an important feature of economic development in the United States. Early technological innovations in transportation were the springboard for industrial growth. New product developments and new production techniques further advanced industrial growth. In relation to productivity, however, technology is difficult to quantify. If technology means the production of knowledge through research and development, it appears the R&D efforts did subside in the late-1960s, but they did not collapse in the late-1970s. The diminution in R&D efforts has been attributed to several factors that emerged in the late-1960s. These include increased government regulation, inflation, and greater concern of managers for the short-run "bottom line."[5]

If technology means embodiment of existing state-of-the-art knowledge in capital or labor, it is clear that, on the capital side, the United States has been slow to take advantage of what is known, particularly with respect to automation, but not that we have become increasingly slow in recent years. There are important reasons for a slow response to automated production—principally the perceived threat to jobs—that are still unresolved, even though the response to available knowledge may be quickening.[6]

If technology means ingenuity, i.e., the ability to identify and exploit opportunities, then we would have to seek answers to the productivity problem in the failure of risk-taking behavior and leadership. Some would argue that such failures have occurred and that the ability to convert capital investment into economic growth lessened in the 1970s. In a sense this is true. The growth of real GNP relative to the growth of real capital investment (called the "investment efficiency ratio") did collapse in the 1970s.[7] The perplexing issue is that while economic growth fell away, investment did not. It is a leap of faith to conclude that the reason for this is a failure of ingenuity.

Capital Services

Contributions of capital and technology appear to be only partial explanations of the productivity slowdown. It is difficult to demonstrate that these channels of productivity growth abruptly malfunctioned in the 1970s, though they may have contributed to the on-going gradual decline that began earlier. One possible extension is to consider an interaction among capital, technology, and other events as the basic source of distortion in productivity growth. It is not so much the stock of capital that contributes to productivity, but the services the stock provides; in the 1970s a wedge may have been driven between the capital stock and the flow of services from the stock.[8] Measures such as the investment efficiency ratio point in this direction. Moreover, a trail of circumstantial evidence suggests that the energy crisis and high inflation of the 1970s were more important than additive measures of their impact on productivity might indicate, and government regulations relating to pollution abatement and safety may have a similar effect. Technology, energy, inflation, and regulation, interacting with the capital stock, could have altered capital-service flows, even though the capital stock itself and the level of investment did not deteriorate substantially.

A failure to embody state-of-the-art knowledge in capital investment has a cumulative effect. Over the years, capital stock and capital services diverge, and the divergence expands across industries. Investment is concentrated in short-lived replacement of technologically second-rate facilities.

4. Peter K. Clark, "Capital Formation and the Recent Productivity Slowdown," *Journal of Finance* (June 1978), pp. 965–75. A study that assigns a more important role to capital formation after 1973 is J.R. Norsworthy, Michael J. Harper, and Kent Kunze, "The Slowdown in Productivity Growth: Analysis of Some Contributing Factors," *Brookings Papers on Economic Activity*, vol. 2 (1979), pp. 387–421.

5. Edwin Mansfield, "How Economists See R&D," *Harvard Business Review*, November/December 1981, p. 101.

6. "The Speedup in Automation," *Business Week*, August 3, 1981, pp. 58–67.

7. New York Stock Exchange, *Building a Better Future: Economic Choices for the 1980s* (Office of Economic Research, December 1979), pp. 8–13.

8. An argument along these lines is presented by Martin Neil Baily, "Productivity and the Services of Capital and Labor," *Brookings Papers on Economic Activity*, vol. 1 (1981), pp. 1–50.

Directors and officers convene below a portrait of Alexander Hamilton, the first Secretary of the Treasury. Standing, l. to r., W.H. Knoell, Richard D. Hannan, John D. Anderson, John W. Kessler, E. Mandell de Windt, J. David Barnes, Raymond D. Campbell, Walter H. MacDonald, John W. Alford. Seated, l. to r., Willis J. Winn and J.L. Jackson.

Investment may remain high but contribute minimally to expanded productivity growth. Inflation tends to shift investment toward short-lived equipment and away from the integrated facilities on the technological frontier. Energy problems divert investment from productivity enhancement to energy conservation. Government regulation has a similar effect favoring equipment that increases compliance with pollution and safety standards. In a sense, the combination of events suggesting a divergence between capital stock and capital services is a measurement problem. Information contained in measures of the capital stock may be less useful in evaluating productivity growth than it once was.

Accounting for the influence of events that may drive a wedge between the capital stock and the flow of capital services from that stock is difficult.[9] In the best of worlds, capital requirements are never fulfilled. Capital stocks continuously must be replaced to restore worn-out facilities. Additions to stocks are needed to provide increasing standards of living. In a world of energy conservation, regulatory compliance, and technology catch-up, achieving higher rates of replacement of the capital stock without sacrificing additions to the capital stock may require new policy directions to support the capital-formation process.

9. See Norsworthy, Harper, and Kunze, "The Slowdown in Productivity Growth"; Baily, "Productivity . . . "; and Peter K. Clark, "Issues in the Analysis of Capital Formation and Productivity Growth," *Brookings Papers on Economic Activity*, vol. 2 (1979), pp. 428–30.

Saving and Investment

Capital formation, i.e., perpetually adding and replacing capital facilities, involves three related elements: saving (willingness to forego current consumption), investment (making additions and replacements), and finance (bridging the gap between saving and investment). Saving and investment patterns change over time, as do the financial arrangements that channel saving into investment. Changes may be evolutionary, supportive of capital formation, as in the case of financial innovations that improve the flow of saving into investment. Changes also may be disruptive and the cause of concern.

One concern related to the productivity problem is the adequacy of the capital-formation process. The question here is whether the level of saving and investment can provide capital-stock growth sufficient to support high productivity while also advancing energy efficiency, pollution abatement and safety standards, and other objectives laying claim to capital. In the simplest sense, do Americans save and invest enough? Adequacy may be an empty question to those who think market-determined levels of saving and investment are relevant performance criteria; yet to others, who measure saving and investment against multiple objectives, the issue is more troublesome. If incentives to save and invest malfunction, suppressing levels of saving and investment, while objectives of capital formation are expanding, new policy directions must be sought in efforts to boost the levels of saving and investment.

Another concern is whether interference with the capital-formation process alters the distribution of saving and investment in ways that retard productivity growth. Disturbances associated with inflation, energy shocks, and other events may alter the composition of saving and investment in ways deleterious to productivity without necessarily changing the level or adequacy of saving and investment. These disturbances may require adjustment to new realities; energy efficiency, for example, is now a prime consideration in capital decision making, whereas energy use was of less importance in the recent past. Disturbances also may impair decision making. The effects of inflation, overregulation, and shortsightedness may foreclose rapid technological adaptation, shift investment away from output-producing capital formation, and distort patterns of saving. If so, new policy directions must focus on

Treasury securities are sold on original issue to the public in the bank's main lobby.

rechanneling saving and investment in a manner more compatible with productivity growth.

The search for new policy directions must be based on reality. What has happened to saving and investment and what can be done to reverse changes that seem undesirable? The raw material, or "sources of funds," in capital formation is saving. *Net saving*, which provides additions to capital stocks, is the difference between current income and current consumption. *Gross saving* includes capital consumption and thus provides for replacement of capital facilities. Investment, i.e., the "uses of funds," is the finished good in capital formation; it is the accumulation of capital assets—net investment being the additions to the capital stock and gross investment including replacement. Of course, saving equals investment in the nation's accounting statements (except for statistical discrepancy). We, therefore, may calculate saving and investment on the same base (sources or uses). The accounting framework that provides the broadest view of saving and investment is the flow-of-funds accounts compiled by the Federal Reserve. This framework treats household purchases of durable goods as a saving and investment activity just as any other accumulation of real assets. Only the service flow from durables is consumption. If the "use of funds" is the base for calculating saving and investment, saving is determined by the activities of households, businesses, governments, and foreign sectors that release (or absorb) funds for capital formation. Essentially, funds are made available by purchasing an asset (financial or real), and funds are absorbed by borrowing. Investment is the summation of different real asset accumulations (see tables 3 through 5).

Average saving rates are computed for the same periods used in estimating productivity growth. The first set of comparisons are based on overlapping five-year intervals between 1951 and 1981; the second set of comparisons refer to periods where endpoints are years of relatively high-capacity utilization. Each of the latter is interrupted by an economic slowdown, and no attempt is made to adjust for differences among these cycle interruptions.

Table 3 Average Saving and Investment Rates
From uses of funds

	Gross S&I as percent of GNP	Net S&I as percent of NNP	Net S&I as percent of gross S&I
Intervals			
1951–56	25.0	11.7	39.5
1956–61	23.8	8.6	30.2
1961–66	24.1	10.3	37.4
1966–71	23.8	10.3	37.0
1971–76	23.6	8.8	31.3
1976–81	24.6	8.9	29.7
High-utilization years			
1956–64	23.8	8.9	36.1
1964–69	24.3	11.4	40.0
1969–73	24.4	10.7	37.1
1973–79	24.6	9.5	32.0

S&I = saving and investment.

SOURCES: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts 1949-1978* (December 1979); *Flow of Funds Accounts Second Quarter 1980* (August 1980).

The gross saving rate (gross saving as a percent of GNP) in the United States has been remarkably stable over the past 30 years (see table 3). From 1951 through 1981, gross saving calculated from the flow of funds averaged about 24 percent of GNP. With small discrepancies this average has been characteristic of subperiods as well. Gross-saving-rate comparisons from the five-year intervals between 1951 and 1981 suggest only minor differences among periods; averages computed between years of high-resource utilization, despite interruptions by recessions of quite different depth and duration, suggest the same pattern. The period 1951–56 stands out somewhat on the high side, but the higher rate in this period was produced by one year, 1951, when the gross saving rate exceeded 27 percent. Virtually all of the robust saving in 1951 was the result of rebuilding consumer-durable stocks, which also had supported high saving in earlier postwar years but did not reappear after 1951. On the low side, the gross saving rate approached 20 percent in 1975, when U.S. government dissaving was especially high and cyclical pressures depressed household saving. Neither "high" nor "low" rates have been sustained for more than a year or two.

The net saving rate (which excludes capital consumption) has been less stable than the gross rate. Over the entire period 1951–81, net saving out of net national product (NNP) averaged nearly 9.5 percent. (NNP is defined here to exclude capital consumption of consumer durables, hous-

ing, and business capital.) For the subperiods between 1951 to 1981, the net rate varied from 12 percent to less than 9 percent. Cyclical fluctuations in the economy heavily influenced net saving rates computed between high-utilization years. The steep recession of 1973–75 and the closely spaced recessions of 1957–58 and 1960–61 are important factors in the relatively low net saving rates in 1956–64 and 1973–79. The range of the net saving rate in individual years was from about 15 percent (in 1951 when consumer-durable accumulation was high) to less than 4 percent (in 1975 when government dissaving and cyclical pressures depressed saving). Excluding these extremes, the net saving rate still varied considerably, reaching highs of about 12 percent and lows of about 6 percent on several occasions.

In recent years, net saving rates have been relatively low, averaging less than 9 percent since 1971. This is about 1.5 percentage points lower than the net saving rates of the 1960s. Years of relatively high net saving since 1971 have been outweighed by years of low or mediocre performance. Of course, relatively severe cyclical downturns contributed to a poor saving environment in the 1970s. Over the entire ten years, however, other factors are involved, as underscored by the erosion of the ratio of net to gross saving, particularly in the later period 1976–81. Simply stated, an increasing proportion of gross saving has come from capital consumption. There are several reasons why capital consumption increased. Most obviously, there was more capital to depreciate in later periods relative to the nation's GNP. Moreover, the composition of capital shifted toward short-lived facilities, which depreciate faster. Equipment (short-lived facilities) now accounts for about one-half of the (fully depreciated) capital stock, compared with less than 45 percent in the 1950s and 1960s. Perhaps most importantly, depreciation rates increased because capital consumption is estimated on a replacement cost basis in the flow of funds. By lifting replacement costs, inflation increases capital consumption and lowers net saving. The end result was that, in the 1970s, a higher gross saving rate was required just to maintain the net saving rate. Because the gross rate did not increase, the net rate fell.

To satisfy increasing demands for capital replacement without further erosion in the ability to add to capital stocks may require breaking, or at least bending, the limits imposed by the stability of the gross saving rate. If the gross saving rate has been largely unaffected by the considerable economic changes that have occurred in the U.S. economy since 1951, prospects for boosting the rate in the 1980s may be more remote than many believe. Of course, the balance between net and gross saving may be improved without raising the gross saving rate. The composition of the net saving rate may offer some clues to ways in which feasible policy changes may affect saving.

Composition of Saving and Investment

The net saving rate may be separated into saving on financial position (portfolios), saving through real asset accumulation (the unborrowed margin backing the net acquisition of real assets), and saving (or dissaving) by governments and foreign sectors. The first of these is measured by the acquisition of financial assets net of borrowing associated with financial market activity (see table 4, columns 1,2). The second is measured by total expenditures for real assets (investment), less capital consumption, less borrowing associated with real-asset acquisition (see table 4, columns 3,4,5). Most borrowing (which should be interpreted to include all external funds raised) is associated with real-asset acquisition. The third, government saving (dissaving), is measured by net funds released (raised) by governments and their agencies (see table 4, columns 6,7). Foreign sectors are treated separately (see table 4, column 8).

The components of the net saving rate have shifted significantly over the years. The contribution to the net saving rate from financial positions, both of businesses and households, increased steadily between 1951 and 1981, with the most rapid increases occurring in the 1970s. On the other hand, the saving margins behind real-asset accumulation have declined. Business capital accumulation, which has always absorbed saving, reduced the net saving rate by about 4 percentage points in the 1970s. The saving margin behind housing expenditures became negative (absorbed saving) in the early 1960s, and the negative contribution rose in the 1970s. The saving margin behind durable-goods expenditures has been variable but consistently positive since 1951. This margin narrowed in the 1970s. In all cases, external funding of real assets rose faster than expenditures. Except for housing, the rate of increase in capital consumption also outpaced the rate of increase in expenditures. Finally, governments have consistently been dissavers since 1951. The rate of dissaving by the U.S. government has risen substantially, especially in the 1970s, while the rate of dissaving by state and local governments has declined.

On balance, increased financial saving would have boosted the net saving rate by 7.8 percentage points between 1951–56 and 1976–81. Changes in the saving margins behind real-asset accumulation lowered the net saving

Table 4 Composition of Net Saving Rate[a]

	Business financial (1)	Household financial (2)	Business capital (3)	Housing (4)	Durable goods (5)	U.S. government (6)	State and local governments (7)	Rest-of-world (8)
Intervals								
1951–56	3.1	6.9	−0.6	1.5	1.9	−0.3	−0.9	0.0
1956–61	2.7	7.4	−1.3	0.7	0.9	−0.5	−1.0	−0.3
1961–66	3.2	8.5	−0.8	−0.4	1.4	−0.5	−0.5	−0.6
1966–71	2.3	9.0	−1.9	−0.4	2.1	−1.2	−0.8	0.2
1971–76	4.6	11.6	−4.3	−1.4	1.4	−2.7	−0.5	0.1
1976–81	5.1	12.7	−4.1	−3.9	0.7	−2.8	−0.1	−0.7
High-utilization years								
1966–69	2.8	7.8	−1.0	0.2	0.9	−0.5	−0.8	−0.5
1969–73	3.3	8.9	−1.1	−0.4	3.1	−0.5	−0.7	−0.2
1973–79	4.8	10.3	−3.9	−3.0	1.7	−1.3	−0.5	0.6
1979–79	5.3	12.7	−4.4	−2.0	0.9	−2.5	−0.2	−0.3

a. Components sum to net saving rate (table 3).

Table 5 Composition of Net Investment Rate[a]

	Business fixed investment (9)	Business inventories (10)	Housing (11)	Durable goods (12)
Intervals				
1951–56	2.7	1.2	4.2	3.3
1956–61	2.3	0.7	3.5	2.0
1961–66	3.7	1.3	2.4	2.9
1966–71	4.3	1.1	1.8	3.4
1971–76	3.3	0.6	2.2	3.0
1976–81	3.8	0.7	2.7	2.4
High-utilization years				
1966–69	3.6	0.9	3.1	2.2
1969–73	4.6	1.4	2.0	3.6
1973–79	4.3	1.0	2.1	3.5
1979–79	3.4	0.9	2.8	2.9

a. Components sum to net investment rate (table 3), except for residual element (see description) not presented.

SOURCES: Tables 4 and 5: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts 1949-1978* (December 1979); *Flow of Funds Accounts Second Quarter 1980* (August 1980).

Calculation of Saving and Investment from Flow of Funds (tables 3 through 5)

Net private domestic saving on financial position
- 1. Businesses
- 2. Households

plus net private domestic saving available (absorbed) through accumulation
- 3. Business capital
- 4. Housing
- 5. Durable goods

plus net private domestic saving augmented (absorbed) in government activity
- 6. U.S. government and agencies
- 7. State and local governments

plus net private domestic saving augmented (absorbed) in international activity
- 8. Rest-of-world

equals net saving and investment (uses of funds)
- 9. Business fixed investment
- 10. Business inventories
- 11. Housing
- 12. Durable goods
- 13. Residual

plus capital consumption

equals gross saving and investment (uses of funds)

plus statistical discrepancy

equals gross saving and investment (sources of funds).

Key:

1. Net increase in financial assets of nonfinancial businesses and financial institutions less net increase in liabilities of financial institutions (assumes all borrowing by nonfinancial business supports capital formation and all borrowing by financial institutions supports financial activity).

2. Net increase in financial assets of households less net increase in liabilities other than mortgages and consumer credit.

3. Business capital investment less capital consumption less net increase in liabilities of nonfinancial businesses.

4. Household expenditures on residential structures less capital consumption less home mortgages.

5. Household expenditures on durable goods less capital consumption less consumer credit (includes fixed investment of nonprofit institutions).

6. Net increase in financial assets less net increase in liabilities of U.S. government, federal agencies, and the monetary authority.

7. Net increase in financial assets less net increase in liabilities of state and local governments.

8. Net increase in financial assets less net increase in liabilities of nondomestic sectors.

9. Business expenditures for fixed capital less capital consumption.

10. Change in business inventories.

11. Household expenditures for residential structures less capital consumption.

12. Household expenditures for durable goods less capital consumption (includes net fixed investment of nonprofit institutions).

13. Discrepancy between net financial investment of total domestic sectors and that of "rest-of-world."

rate by 8.2 percentage points between the same periods. Together, the U.S. government and state and local governments further reduced the net saving rate by 1.7 percentage points.

Changes in the composition of net saving since 1951 have been accompanied by compositional changes on the investment side. The net saving rate equals the net investment rate, and investment may be separated into business fixed investment, business inventories, housing, and consumer durable goods. These components vary with changes in the total and also in relation to each other (see table 5). The 1960s provided a favorable environment for business fixed investment. The contribution to the net rate from business fixed investment was higher in the 1960s than before or since, and inventory investment also was strong. In 1966–71, the two business components contributed 5.3 percentage points to the net investment rate. In the 1970s, the composition of net investment shifted toward housing, which was also important in the 1950s. By 1976–81, housing and consumer durables contributed 5.1 percentage points to the net rate, nearly 30 percent larger than the combined business components. The shift in the 1970s did not completely restore household investment relative to business investment to its preeminence of the 1950s, but much of the ground gained by business investment in the 1960s was lost.

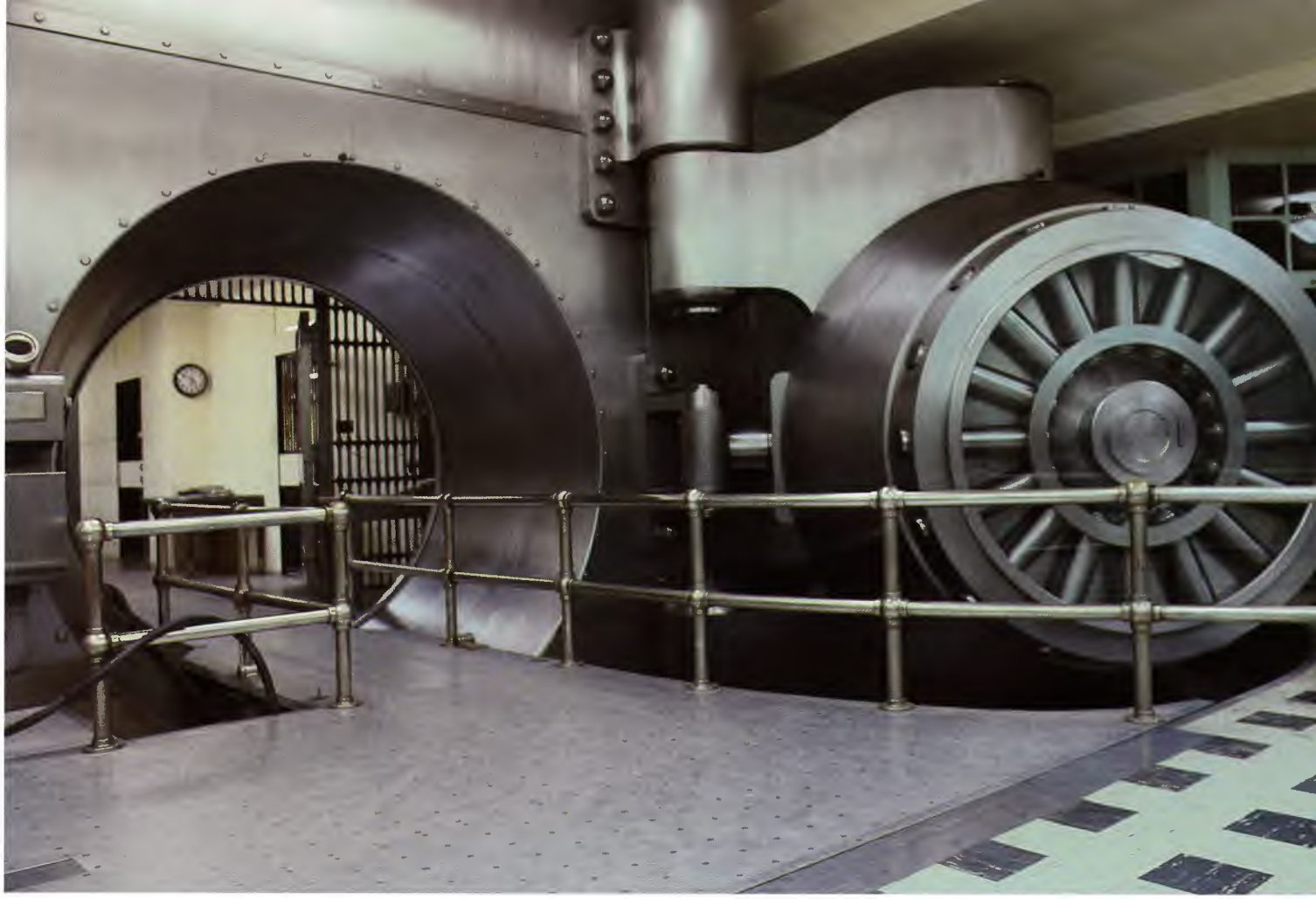
Although it is difficult to explain the productivity problem in the United States by diminished growth in the capital-labor ratio, there are indications in the rate of saving and investment that suggest some of the problem, and its solution, may be found here. Inadequate saving and investment are hard to support on historical grounds. Gross saving and investment

Hand-crafted of Swedish iron, this eagle adorns a cage grille in the bank's main lobby.

relative to output have not collapsed, or even deviated from the long-term mean. However, if productivity growth is largely supported by net saving and investment, there is more concern; the net rate did sag in the 1970s. Moreover, there were important compositional changes in saving and investment in this period. Clearly, saving shifted toward financial positions in the private sector. This is consistent with the greater financial market opportunities afforded savers throughout the postwar period. However, lower saving margins behind real-asset accumulation and the larger government appetite for funds more than offset higher rates of financial saving. Moreover, investment shifted away from productivity-inducing business outlays toward housing.

Saving margins behind business fixed investment and housing became increasingly negative as net outlays were narrowed by rising capital consumption adjusted for price change and as external funding of net outlays rose rapidly. Inflation and the tax treatment of nominal capital gains and interest payments meant that saving margins were not necessary or desirable for asset accumulation. Greater external funding by business was encouraged by the reasonable presumption that repayment would be made in cheaper dollars. Homeowners, seeing their equity in housing advance with inflation, could borrow against the equity to support other activities and deduct the interest from taxes. Rising replacement costs of capital contributed further to lower saving margins behind real-asset accumulation and reduced the net rate of saving and investment.

The shift in investment away from business toward households did not mark a return to the 1950s, when "pent-up demand" from the years of depression and war may have strengthened both housing and durables accumulation. Nevertheless, relative gains made by business investment in the low-inflation environment of the 1960s were reversed.



The huge door of the bank's main vault weighs 100 tons, yet the door is so delicately balanced that it can be closed manually. Currency and Treasury and municipal securities are stored in the vault.

New Policy Directions

There is no magic formula for improving the distribution of saving and investment or for boosting their level. Traditional policy changes, such as lowering personal tax rates, may have desirable distributional impacts but not increase overall saving and investment rates. In the past, at least, gross saving has varied little as tax rates have changed. Going further to balance the budget (eliminate government dissaving) might remove an obstacle and allow some increase in the gross rate. Some analysts who have examined the constancy of the gross rate suggest this possibility.[10] Going still further to consider more dramatic policy changes that remove the tax incentives supporting consumer and mortgage credit, for example, may also generate higher saving and investment. Changes of this type might boost net and gross saving rates because of their impact on saving margins required for the purchase of housing and consumer durables, and they would tend to shift investment toward the business sector. They also would restrict access to durables and housing and, therefore, would be highly unpopular. New policy directions aimed solely at improving the distribution of investment may be effective. Incentives such as those already legislated in the Economic Recovery Act of 1981 are warranted, not because they will boost overall investment but because they will shift investment toward the business sector, where adjustments for energy efficiency, technological catch-up, and regulatory compliance are part of the productivity problem and the capital requirement. Still, the distributional changes in saving and investment rates that have occurred since 1951, desirable and undesirable, are related to inflation. New directions in policy aimed at improving saving and investment performance may include many building blocks, but a cornerstone of these efforts must be a lower rate of inflation.

10. The stability of the gross saving rate, first noted by Edward F. Denison, has been traced backward to the turn of the twentieth century by Paul A. David and John L. Scadding. David and Scadding explain stability in the gross rate by "ultrarational" households, which adjust their own saving behavior to that of businesses but not governments. Government dissaving, therefore, represents lower net and gross saving and investment. See Paul A. David and John L. Scadding, "Private Savings: Ultrarationality, Aggregation, and 'Denison's Law'," *Journal of Political Economy*, March/April 1974, pp. 225–49.

Comparative Statement of Condition

	Year ended December 31	
	1981	1980
ASSETS		
Gold Certificate Account	**$805,000,000**	$847,000,000
Special Drawing Rights Certificate Account	**253,000,000**	201,000,000
Coin	**38,486,707**	48,558,688
Loans to Depository Institutions	**18,590,000**	202,420,000
Federal Agency Obligations—Bought Outright	**662,500,183**	660,240,170
U.S. Government Securities:		
Bills	**3,583,457,763**	3,300,547,733
Notes	**4,354,424,538**	4,436,095,439
Bonds	**1,335,875,027**	1,276,210,128
Total U.S. Government Securities	**9,273,757,328**	9,012,853,300
Total Loans and Securities	**9,954,847,511**	9,875,513,470
Cash Items in Process of Collection	**383,277,625**	478,639,333
Bank Premises	**26,595,475**	23,994,150
Other Assets	**594,580,271**	708,326,686
Interdistrict Settlement Account	**(1,066,590,844)**	(321,784,244)
Total Assets	**$10,989,196,745**	$11,861,248,083
LIABILITIES		
Federal Reserve Notes	**$8,972,143,190**	$9,462,594,235
Deposits:		
Depository Institutions	**1,259,039,221**	1,528,685,121
U.S. Treasurer—General Account	**-0-**	-0-
Foreign	**25,201,000**	29,548,000
Other Deposits	**20,021,713**	17,373,141
Total Deposits	**1,304,261,934**	1,575,606,262
Deferred Availability Cash Items	**338,827,588**	435,038,138
Other Liabilities	**181,061,433**	197,629,548
Total Liabilities	**$10,796,294,145**	$11,670,868,183
CAPITAL ACCOUNTS		
Capital Paid In	**$96,451,300**	$95,189,950
Surplus	**96,451,300**	95,189,950
Total Liabilities and Capital Accounts	**$10,989,196,745**	$11,861,248,083

Comparison of Earnings and Expenses

	Year ended December 31	
	1981	1980
Total Current Earnings	**$1,132,402,974**	$974,469,886
Net Expenses	**55,151,690**	48,768,768
Current Net Earnings	**1,077,251,284**	925,701,118
Additions to Current Net Earnings:		
Profit on Foreign Exchange Transactions (Net)	**-0-**	7,977,852
All Other	**450,960**	-0-
Total Additions	**450,960**	7,977,852
Deductions from Current Net Earnings:		
Loss on Sales of U.S. Government Securities (Net)	**9,171,623**	15,589,711
Loss on Foreign Exchange Transactions (Net)	**24,173,356**	-0-
All Other	**186,188**	1,506,064
Total Deductions	**33,531,167**	17,095,775
Net Deductions	**33,080,207**	9,117,923
Earnings Credits Used by Depository Institutions	**137,957**	-0-
Assessment for Expenses of Board of Governors	**4,970,500**	5,119,700
Net Earnings before Payments to U.S. Treasury	**1,039,062,620**	911,463,495
Dividends Paid	**5,756,998**	5,666,775
Payments to U.S. Treasury (Interest on F.R. Notes)	**1,032,044,272**	905,500,670
Transferred to Surplus	**1,261,350**	296,050
Total	**$1,039,062,620**	$911,463,495

Federal Reserve Bank of Cleveland Directors

As of March 11, 1982

	Class[a]	Term expires December 31
Chairman and Federal Reserve Agent		
J.L. Jackson *Executive Vice President and President—Coal Unit* *Diamond Shamrock Corp., Lexington, KY*	C	1984
Deputy Chairman		
W.H. Knoell *President and Chief Executive Officer* *Cyclops Corporation, Pittsburgh, PA*	C	1983
John W. Alford *Chairman of the Board and Chief Executive Officer* *The Park National Bank, Newark, OH*	A	1982
J. David Barnes *Chairman of the Board* *Mellon Bank, N.A., Pittsburgh, PA*	A	1983
Raymond D. Campbell *Director* *The Oberlin Savings Bank Company, Oberlin, OH*	A	1984
John W. Kessler *President* *John W. Kessler Company, Columbus, OH*	B	1982
E. Mandell de Windt *Chairman of the Board* *Eaton Corporation, Cleveland, OH*	B	1983
Richard D. Hannan *Chairman of the Board and President* *Mercury Instruments, Inc., Cincinnati, OH*	B	1984
John D. Anderson *Senior Partner* *The Andersons, Maumee, OH*	C	1982
Member, Federal Advisory Council, Fourth District		
John G. McCoy *Vice Chairman and Chief Executive Officer* *Banc One Corporation, Columbus, OH*		

a. Class A and B directors are elected by member banks in the district; Class C directors are appointed by the Board of Governors of the Federal Reserve System.

Cincinnati Branch	Appointed by[a]	Term expires December 31
Chairman		
Clifford R. Meyer *President and Chief Operating Officer* *Cincinnati Milacron Inc.,Cincinnati, OH*	Board of Governors	1983
Oliver W. Birckhead *Chairman of the Board and Chief Executive Officer* *The Central Trust Company, N.A., Cincinnati, OH*	Cleveland board	1982
O.T. Dorton *President* *Citizens National Bank, Paintsville, KY*	Cleveland board	1983
Sherrill Cleland *President* *Marietta College, Marietta, OH*	Cleveland board	1984
Richard J. Fitton *President and Chief Executive Officer* *First National Bank of Southwestern Ohio, Hamilton, OH*	Cleveland board	1984
Sister Grace Marie Hiltz *President* *Sisters of Charity Health Care Systems, Inc., Cincinnati, OH*	Board of Governors	1982
Don Ross *Owner* *Dunreath Farm, Lexington, KY*	Board of Governors	1984
Pittsburgh Branch		
Chairman		
Milton G. Hulme, Jr. *President and Chief Executive Officer* *Mine Safety Appliances Company, Pittsburgh, PA*	Board of Governors	1983
William D. McKain *President* *Wheeling National Bank, Wheeling, WV*	Cleveland board	1982
Ernest L. Lake *President* *The National Bank of North East, North East, PA*	Cleveland board	1983
Robert C. Milsom *President* *Pittsburgh National Bank, Pittsburgh, PA*	Cleveland board	1984
James S. Pasman, Jr. *Executive Vice President—Finance* *Aluminum Company of America, Pittsburgh, PA*	Cleveland board	1984
Robert S. Kaplan *Dean, Graduate School of Industrial Administration* *Carnegie-Mellon University, Pittsburgh, PA*	Board of Governors	1982
Quentin C. McKenna *President and Chief Executive Officer* *Kennametal Inc., Latrobe, PA*	Board of Governors	1984

a. Federal Reserve Bank branch directors are appointed either by the Reserve Bank's main office directors or by the Board of Governors.

Federal Reserve Bank of Cleveland Officers

As of March 11, 1982

Willis J. Winn
President

Walter H. MacDonald
First Vice President

John M. Davis
Senior Vice President and Economist

William H. Hendricks
Senior Vice President

Lee S. Adams
Vice President and General Counsel

Randolph G. Coleman
Vice President

Patrick V. Cost
General Auditor

Harry W. Huning
Vice President

John W. Kopnick
Vice President

Thomas E. Ormiston, Jr.
Vice President

Lester M. Selby
Vice President and Secretary

Donald G. Vincel
Vice President

Robert F. Ware
Vice President and Economist

Andrew J. Bazar
Assistant Vice President

Oscar H. Beach, Jr.
Assistant Vice President

Margret A. Beekel
Assistant Vice President

Thomas J. Callahan
Assistant Vice President and Assistant Secretary

John J. Erceg
Assistant Vice President and Economist

Creighton R. Fricek
Assistant Vice President

Robert J. Gorius
Assistant Vice President

Norman K. Hagen
Assistant Vice President

David P. Jager
Assistant Vice President

James W. Knauf
Assistant Vice President

Cathy L. Petryshyn
Assistant Vice President

David E. Rich
Assistant Vice President

John J. Ritchey
Assistant General Counsel

Burton G. Shutack
Assistant Vice President

William J. Smith
Assistant General Auditor

Robert Van Valkenburg
Assistant Vice President

Andrew W. Watts
Assistant Vice President

John J. Wixted, Jr.
Assistant Vice President

Cincinnati Branch

Robert E. Showalter
Senior Vice President

Charles A. Cerino
Vice President

Jean H. Dean
Assistant Vice President

Roscoe E. Harrison
Assistant Vice President

David F. Weisbrod
Assistant Vice President

Jerry S. Wilson
Assistant Vice President

Pittsburgh Branch

Harold J. Swart
Senior Vice President

Donald G. Benjamin
Vice President

Paul E. Anderson
Assistant Vice President

Joseph P. Donnelly
Assistant Vice President

Ronald J. Ford
Assistant Vice President

Lois A. Riback
Assistant Vice President

Columbus Office

Charles F. Williams
Assistant Vice President

The Federal Reserve Bank of Cleveland's *1981 Annual Report* was prepared by the Research Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101.

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150 East 4th Street, Cincinnati, OH 45202
(513) 721-4787

Pittsburgh Branch
717 Grant Street, Pittsburgh, PA 15219
(412) 261-7800

Columbus Regional Check Processing Center
965 Kingsmill Parkway, Columbus, OH 43229
(614) 846-7050