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Midyear 1982

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ECONOMIC
PERSPECTIVES

Review and outlook: 1981-82
Lagged reserve accounting and the
Fed's new operating procedure
The effects of usury ceilings

Announcement of new publications

The Federal Reserve Bank of Chicago recently sampled **Economic Perspectives** readers concerning their likes and dislikes and suggestions for improvement. As a result of this survey, the Research Department is in the process of redesigning the bank's existing publications to satisfy the interests of a wide variety of readers. As an example, we have begun a new publication, **Midwest Update**, a monthly letter focusing on regional economic developments.

Beginning in January 1983, a new economic review will replace **Economic Perspectives**. Current subscribers will automatically receive this new publication. During the 1982 transition period, **Economic Perspectives** will be published less frequently. In addition to the Midyear 1982 issue, two other issues will be published, one in the autumn and one in the winter.

Review and outlook: 1981-82 3

The Midwest was hit harder than other regions of the country by the stubborn recession that began in the spring or summer of 1981.

Hard times—the Midwest in trauma	3
Prolonged slump for agriculture	9
World economy is slow to improve	14
Fiscal policy—a new approach	18
Financial markets and monetary policy	22
Prelude to recovery	28
Economic events in 1981—a chronology	30

Lagged reserve accounting and the Fed's new operating procedure 32

Under lagged reserve accounting the Fed's new operating procedure adopted on October 6, 1979 led to increased week-to-week volatility in deposits.

The effects of usury ceilings 44

The evidence suggests that usury ceilings reduce the supply of credit to those whom the ceilings are designed to protect.

CONTENTS

ECONOMIC PERSPECTIVES

Midyear 1982, Volume VI, Issue 1

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Review and outlook: 1981-82

Hard times—the Midwest in trauma

In early 1982, the nation remained in the grip of a painful business recession that began in the spring or summer of 1981. The Midwest, with its heavy concentration of durable goods manufacturing, was the region of the country most severely affected. Declines in production were reported for most types of manufacturing, agriculture, trade, transportation, and even government. Coming on the heels of the downturn that ended in the second quarter of 1980, the 1981 recession was an unprecedented second recession in two years. Moreover, in contrast with most downturns of the past, the 1981 recession began at a time when the economy had significant margins of unused capacity, both material and human.

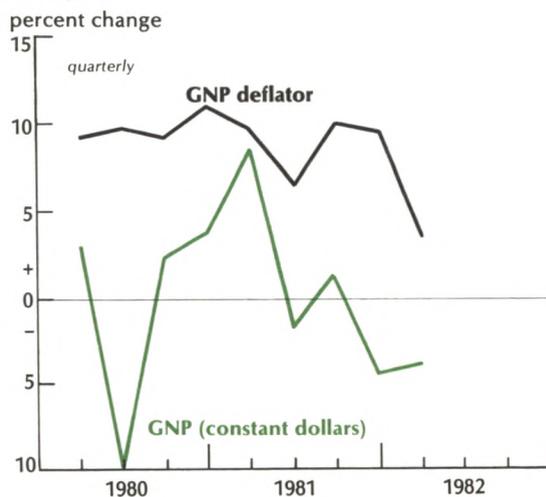
In the first quarter of 1982, reports on output, orders, and employment suggested that the rate of decline had slowed. Price discounting and cuts in production were reducing excessive inventories of finished goods. There were hopes for an early end to the downturn and for a gradual improvement in activity later in the year, aided by slower inflation, lower interest rates, and the July 1 reduction in personal income taxes. Nevertheless, pessimism about the long-term course of the economy was more profound than at any time since the 1930s. Widespread financial distress, high prices, high interest rates, intense competition (both domestic and foreign), and a lack of job opportunities combined to depress public morale.

A disappointing year

In early 1981, the typical professional forecast called for little or no growth in real

activity in the first half of the year, followed by at least a modest improvement in the second half. Instead, the first quarter proved to be surprisingly (and deceptively) robust, possibly aided by a mild winter. Total economic activity was about unchanged, on balance, in the second and third quarters. However, a sharp downturn occurred in the fourth quarter when constant dollar gross national product (real GNP) declined at an annual rate of almost 5 percent. The Federal Reserve's Industrial Production Index, measuring physical activity in manufacturing, mining, and electric and gas utilities, hit a peak in July and then declined at an accelerating pace through year-end. Wage and salary employment peaked at 92 million in September and then

Economic activity declined while inflation slowed in late 1981 and early 1982



dropped to an average of 91 million in the first quarter of 1982. Unemployment rose to 9 percent nationally, and to substantially higher levels in the Midwest.

National growth slows

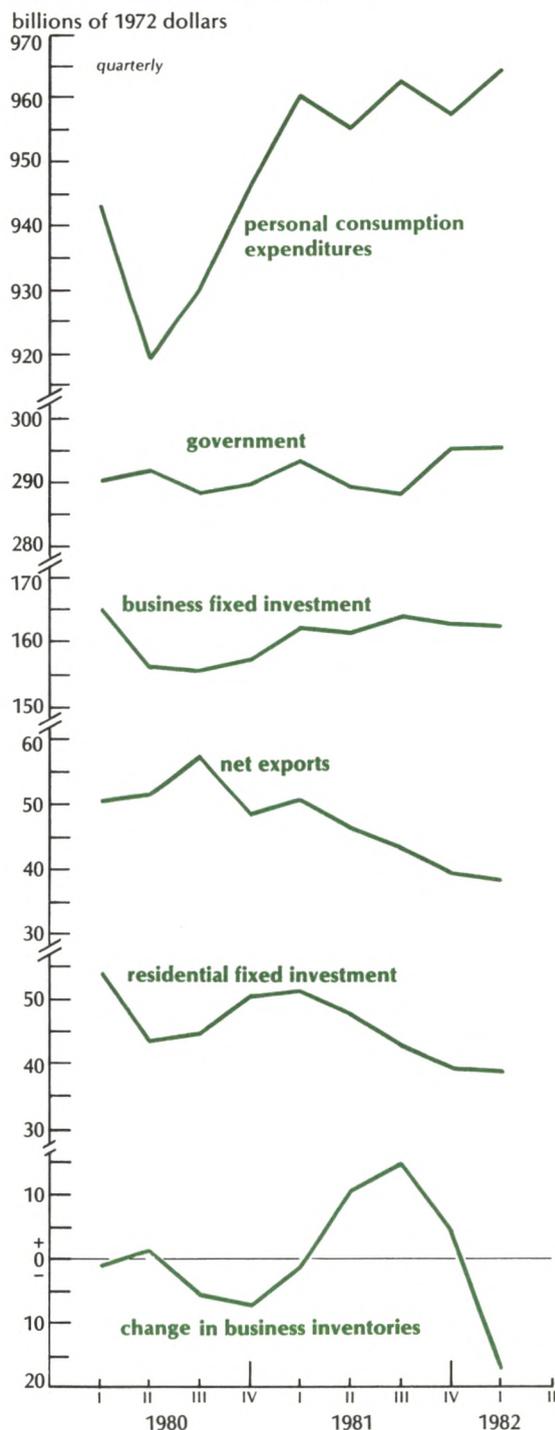
The sluggishness of the economy since 1979 ended three decades of vigorous growth and remarkable resiliency. From 1947 through 1973, real GNP grew at an average annual rate of over 3.8 percent despite recessions in 1954, 1958, and 1970. After each downturn the economy not only regained its previous high within a year or so, but also reasserted a strong long-term rate of growth.

The 1973-75 recession, associated with the Arab oil embargo, was the longest (five quarters) and the deepest (a 5 percent reduction in real GNP) since the 1930s. Nevertheless, after some far-reaching and painful adjustments, the national economy struggled back to a level of reasonably full prosperity in 1978 and 1979. However, economic growth slowed in 1979 and has been weak ever since. Real GNP declined 0.2 percent in 1980 and rose only 2 percent in 1981. The standard forecast for 1982 calls for a slight decline or, at best, no significant growth. (Despite inaccurate predictions of the quarterly pattern for 1981, the typical forecast for the year-to-year change was substantially correct.) Assuming that real GNP this year equals the 1981 level, it will be 15 percent below the 3.8 percent growth path of 1947-73, extrapolated through 1982. The shortfall in production would cumulate in future years if slow growth continues. Such a prospect has sobering implications for the national standard of living.

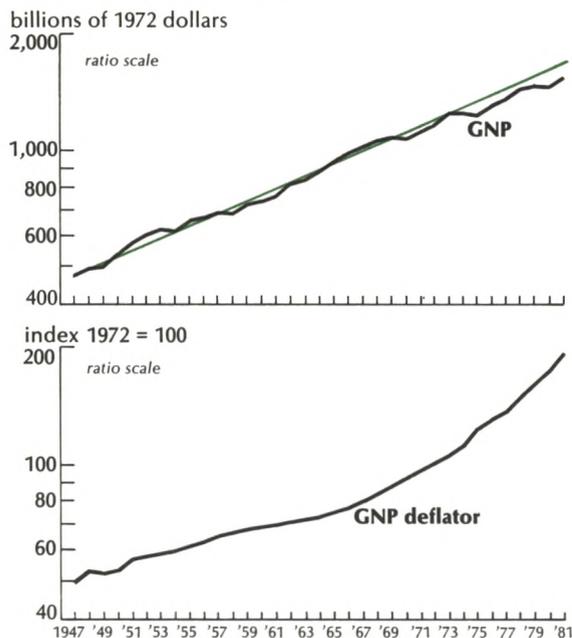
Inflation moderates

World War II was followed by a surge of inflation after price controls were removed. Another surge occurred during the Korean War. In 1953, the GNP deflator, a measure of the general price level, was 90 percent above the level of 1941. From 1953 through 1965 the deflator rose at an average rate of only 2 per-

Consumption expenditures and government purchases remained strong in early 1982, while other sectors declined further



Over the past decade, total output dropped below its long-term trend; inflation accelerated



cent annually—in retrospect, a very favorable record.

After American combat forces entered the Viet Nam War in 1965, large federal deficits and excessive money and credit growth contributed to a sharp acceleration in the rate of inflation. Between 1965 and 1973, the GNP deflator increased at an annual rate of 4.5 percent. The Arab oil embargo and the resulting rapid rise in energy prices were associated with a further speed-up of inflation between 1973 and 1981, when the deflator rose at an average annual rate of 8 percent.

In 1981, the deflator rose 9 percent, the same as in 1980, but with a significant slowing late in the year. Most analysts expect the inflation rate to decline to 7 percent in 1982. Unfortunately, even a 7 percent inflation rate, when compounded, implies a doubling of the price level in only 10 years.

Labor costs and productivity

Worker compensation, including benefits, continued to rise rapidly in 1980 and 1981,

despite reduced job opportunities and rising unemployment. On average, compensation in the nonfarm business sector rose 10 percent in 1981, the same as in 1980, which is the record high for this series starting in 1948. Some large unions in construction, mining, and manufacturing won substantially larger first-year gains.

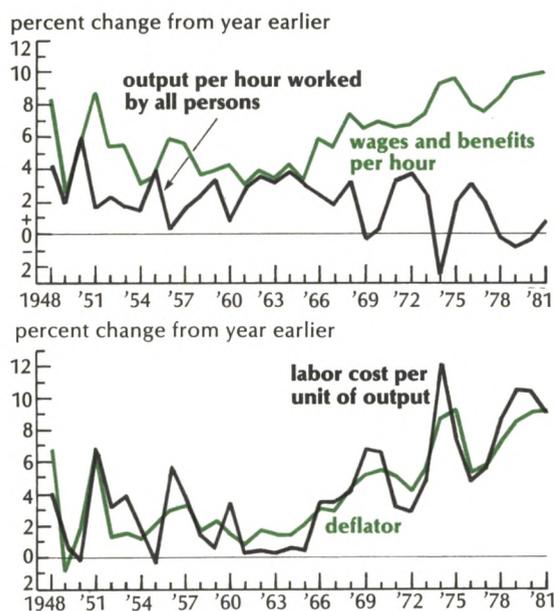
Rising labor compensation need not push up unit labor costs if productivity—output per worker hour—rises at a similar pace. If productivity improvement in the entire economy matches growth in compensation, the supply of goods and services can keep up with rising labor income. Labor costs per unit of output, and prices of this output, can remain relatively stable. Unfortunately, in recent years labor cost per unit of output has fully reflected increases in compensation because productivity, breaking the long-term trend, has been declining or, at best, showing sporadic gains.

From 1947 through 1977, hourly compensation in the nonfarm private economy rose at an average annual rate of 5.8 percent. Output per hour rose 2.4 percent annually, offsetting part of the rise in compensation. Unit labor costs and prices both rose at an annual rate of about 3.4 percent over this 30-year period, closely approximating the excess of the increase in compensation over the rise in productivity.

From 1977 through 1981, compensation increased at a rate of 9.6 percent, while productivity *declined* slightly. Unit labor costs, therefore, rose slightly faster than compensation. Prices rose at an annual rate of about 9 percent. For three consecutive years, 1978-80, productivity declined slightly. Last year it rose, but by only about 1 percent.

The reasons for the recent poor record on productivity are many and varied. Shifts in production methods due to increased fuel prices, irregular production schedules, low operating rates relative to capacity, and restrictive work rules each played a role. In periods of precipitous decline, like the fourth quarter of 1981, measured productivity drops abruptly because workers are not released as

Slumping productivity and rapid wage and benefit gains boosted unit labor costs



quickly as production schedules are cut back. Productivity usually rises rapidly in the early stages of a business expansion because few bottlenecks impede rising production, and because experienced workers and the most efficient facilities are put back to work.

The analysis above implies that the rise in compensation must slow, or productivity must rise, preferably both, if inflation is to moderate. This must be accomplished in an environment of monetary and fiscal restraint. This is the aim of the negotiations between management and labor unions in recent months to reopen existing agreements in such sectors as motor vehicles, meat packing, and trucking. Managements wish to reduce compensation, or at least slow its rate of increase and to alter work rules that impede efficient use of men and facilities. Writing a new chapter in U.S. labor relations, unions have shown some willingness to consider such concessions. In return, they are asking for greater job security and a larger voice in future decision making

The recession in the Midwest

The region of the Seventh Federal Reserve District, encompassing much of what is frequently referred to as the Midwest, includes both the nation's industrial heartland and its most productive agricultural area. With 15 percent of the country's population, the five District states produce almost a fourth of its manufactured durable goods and much larger shares of its motor vehicles, farm and construction equipment, industrial machinery, and steel. These states also produce half of the nation's corn, soybeans, and pork and a fourth of its milk.

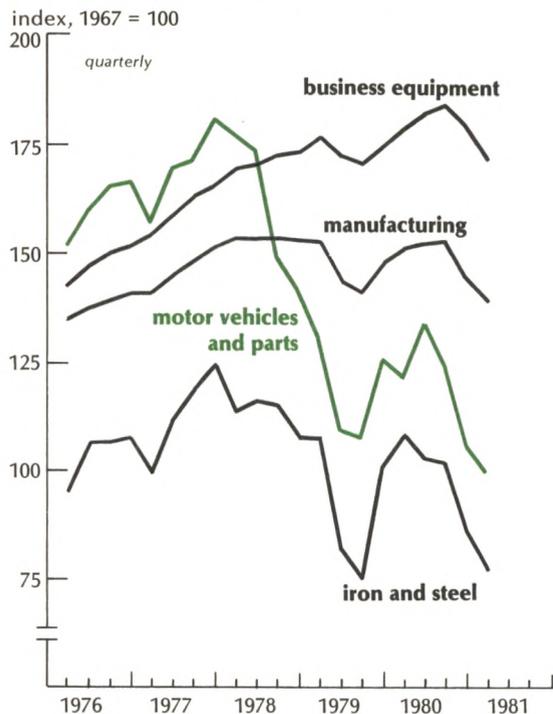
Growth of population and employment in the Midwest has lagged the performance of the South and West since 1950, and especially since 1970. As in earlier decades when growth in the Midwest equaled or exceeded that of the nation, its durable goods industries have been vulnerable to cyclical fluctuations. Until the last three years, however, autos, steel, farm equipment, and the other volatile industries always rode through periods of adjustment and snapped back unimpaired to new highs. The region remained basically healthy and vigorous.

In early 1982, wage and salary employment in the Midwest was 6 percent below the prosperous level of early 1979. Nationally, total employment declined in the fourth quarter of 1981 and in early 1982, but was still 3 percent above the level of early 1979. Output of durable goods nationally was 10 percent below the rate of the recent peak in July, and 13 percent below that of March 1979, which still marks the record high. Nondurable goods output was down 7 percent from the all-time peak reached last August.

Fuel prices hit hard

Many of the present problems of the Midwest are attributable to the rapid escalation of world oil prices. Following the imposition of the oil embargo in 1973, the benchmark price for Saudi Arabian light crude oil rose from \$3.00 per barrel in October 1973 to

Output has fallen sharply in important Seventh District industries



\$11 in 1974, and to \$13 in 1977. The price was boosted further by the cutoff of oil from Iran in 1979, and it reached \$34 in 1981.

With decontrol in 1981 domestic oil prices approached this level. The effects were far reaching. High fuel prices had an especially severe impact on the motor vehicle industries of the Midwest, whose sales were further depressed in 1980 and 1981. The number of autos produced domestically declined 2 percent in 1981 from the depressed level of 1980, and was 32 percent below 1978. Truck output was up 2 percent last year, but 55 percent below the 1978 level. Imported cars, mainly small economical models from Japan, increased their share of the market from 18 percent in 1978 to 27 percent in 1981. For trucks the import share was 26 percent last year, up from 7 percent in 1978.

Also in 1979, tightening credit started a precipitous nationwide decline in residential

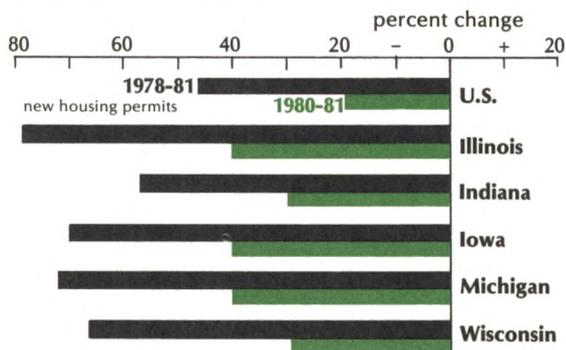
construction which hit the Midwest very hard. Nationally, housing starts in 1981 were 50 percent below the peak of the early 1970s. In the Midwest, starts were 60 to 80 percent below the peak. Slower residential construction activity reduced demand for construction equipment.

Aside from reducing sales of goods manufactured in the Midwest, the energy crisis had other serious effects on the region. Primarily because of its colder winters and aging buildings and equipment, the Midwest consumes a disproportionate share of the nation's oil, natural gas, and low-sulfur coal (mandated by anti-pollution regulations). It produces only a very small share of its needs. Consequently, the Midwest is an energy "importer" both from abroad and from other states. High fuel prices, which increase production and living costs, partly reflect severance taxes imposed by the producing states. Increasingly, Midwest companies have chosen to move at least a portion of their operations to the Sunbelt where costs of fuel, labor, and government are lower.

Some other problems

While the Midwest leads the nation in output of business equipment, it produces a relatively small portion of the equipment used to develop, exploit, and refine resources of oil and natural gas. Oil and gas operations

Housing slump has been especially severe in Seventh District states



have attracted a large share of the nation's investment dollars. Not only have the energy companies enjoyed a heavy cash flow, but they are able to pay interest rates that keep other sectors from raising all of the outside funds that they desire.

Another growing sector is defense procurement. Here, too, the Midwest produces a relatively small share of the high-technology items demanded. Defense production is concentrated on the West Coast and in several states in the Southwest and Northeast.

Among the more serious side effects of the agricultural depression of 1980-81 were a reduction in sales of farm equipment and sharp slowdowns in the economies of smaller cities serving the farm community. In contrast with earlier periods of industrial recession when agriculture had often remained prosperous, declines in farm income have accompanied and reinforced the recent decline in industry.

Similarly, state and local governments experienced shortfalls of revenues and cuts in federal grants, forcing them to curtail programs and employment. In previous recessions, state and local outlays had continued to grow, thereby helping to offset declines in private sector activity.

Most Midwest producers of materials and finished goods have faced increasing foreign competition in recent years. Imports of foreign goods—produced, in many cases, in modern plants with lower labor costs—have made inroads in many lines, but especially in motor vehicles, electronics, and steel. Exports of most Midwest products, meanwhile, have declined or grown more slowly. Imported components also have become common in products assembled here. In 1981, the high value of the dollar provided an important additional advantage to foreign competitors.

Lagging sales reduced cash flow, eroded business confidence, and created excess capacity. These factors, coupled with record high interest rates, caused a sharp drop in demand for equipment produced in the Midwest, which accelerated in the final months of 1981 and in early 1982.

Some sectors prosper

Not all important lines of business in the Midwest have suffered reverses in the recent troubled years. Some have continued to expand at a vigorous pace. In manufacturing, these include pharmaceuticals, medical diagnostic and treatment apparatus, and advanced business communications systems. Among the service industries, law, accountancy, financial and managerial consulting, and futures trading have required additional personnel and larger facilities. This development is particularly noteworthy in Chicago where a boom in office buildings has countered sluggishness in most other types of construction.

The outlook remains somber

For three decades the U.S. economy has enjoyed unprecedented prosperity in an exhilarating atmosphere generated by inflationary expectations. But, in the words of Federal Reserve Board Chairman Paul Volcker: "Sustainable growth cannot be built on inflationary policies." Domestic raw materials have proved to be inadequate to accommodate peak level demand and the nation has become heavily dependent upon imported supplies of oil, natural gas, metallic ores, and steel. Rising prices have encouraged a flood of imports over a broad spectrum. Low, or negative, real interest rates have resulted in a transfer of wealth from savers to borrowers, an untenable process which came to an abrupt end in the 1980s.

The nation's current problems developed over a period of three decades and cannot be corrected in a year or two. For many workers and businesses, especially those located in the Midwest, the transition to stable and sustainable growth will be painful and arduous.

Despite the prevailing gloom in early 1982, there are hopes for a reversal of the downturn in the second quarter. Personal income remains at a high level and will be augmented by a tax cut in mid-1982. A clear trend towards a reduced rate of domestic inflation in late 1981 and early 1982 raises real

incomes and tends to improve the competitive position of U.S. producers in world markets. Inventories of most materials and components are lean, partly because of heavy financing costs, and production cuts are reducing excessive stocks of finished goods.

Any improvement in final sales will quickly bring a rise in factory orders. As confidence is restored and excess capacity is reduced, investment incentives provided by the Tax Act of 1981 are expected to encourage capital spending.

Prolonged slump for agriculture

The financial problems that struck agriculture in 1980 became more acute last year. Analysts had expected significant improvement in farm earnings in 1981. Aggressive bidding by foreign buyers and the shrinkage in U.S. supplies due to the drought-reduced harvest of 1980 were expected to keep crop prices high. Livestock prices were expected to rise as farmers cut production in response to their prolonged financial squeeze. Early 1981 projections also envisioned substantial upward pressures on food prices and a marked recovery in farm capital expenditures.

Actual 1981 developments deviated sharply from these expectations. Grain prices declined because of a softening in world demand for U.S. grains and oilseeds, and record harvests worldwide. New peaks in livestock production combined with sluggish demand to hold the line on livestock prices. Because of these developments, most measures of farm earnings declined again in 1981, culminating a steep two-year slide. Inflation outstripped the rise in farm asset values, lowering the real equity in the farm sector for the second consecutive year. Agribusiness firms suffered another year of depressed sales. But upward pressures on food prices moderated appreciably. Last year was the sixth out of the past seven that the average rise in retail food prices has been less than the rise in all consumer prices.

Farm prices declined all year

The composite measure of farm commodity prices averaged 3 percent higher in

1981 than in 1980, but trended lower throughout the year. By year-end, the measure was 12 percent lower than the year before and 2 percent lower than two years earlier. The slide intensified financial losses of many District farmers, particularly livestock producers and crop farmers who were hit hard by the 1980 drought.

Prices of corn and soybeans, which account for 40 percent of the roughly \$32 billion in annual sales of farm commodities from District states, were a fourth lower at year-end than the year before and well below the cost of production. Cattle and hog farmers, who also account for nearly 40 percent of farm commodity sales in this region, experienced operating losses during most of last year, continuing a trend that has prevailed since mid-1979. Dairy farmers, whose receipts account for 15 percent of farm commodity sales in District states, fared relatively well again in 1981. Sustained by the federal support program, milk prices averaged higher in 1981 than the year before, despite excess production. Because of its high cost, the dairy support program was significantly modified in 1981 farm legislation.

Bumper harvest, weaker exports

Supply factors probably accounted for most of the decline in farm prices last year. But weakening demand factors also played a significant role.

Grain and oilseed prices surged to high levels in the latter part of 1980. But prices began to weaken in early 1981 when it became

apparent that world supplies of grains and oilseeds would be bolstered by a large spring harvest in the Southern Hemisphere. Simultaneously, domestic utilization of grains for livestock feed was declining and soybean exports were lagging. The downward pressures on grain and oilseed prices intensified by late spring as the weakness in exports spread to corn. Reflecting this, combined U.S. export shipments of corn and soybeans in the third quarter were a fourth lower than the year before. For the year, corn exports were down a tenth. A fourth-quarter surge, however, held soybean exports close to the 1980 level.

The downturn in world demand was in sharp contrast to the 1970s when U.S. export shipments of grains and oilseeds rose at a compound annual rate of 10 percent. The downturn reflected, in addition to the large supplies in other exporting countries, the higher value of the U.S. dollar, high interest rates, and slow economic growth in almost every major industrialized country of the world. These factors encouraged hand-to-mouth buying patterns in major importing countries.

Grain and oilseed prices fell sharply during the second half of last year. Despite the third consecutive year of poor crops in the Soviet Union, it became increasingly clear that the Northern Hemisphere harvest would be very large, particularly in North America. According to final 1981 estimates for the United States, the index of all crop production rose to 117 (1977=100), up 17 percent from the year before and up 4 percent from the previous high two years earlier. The 1981 corn harvest, at 8.2 billion bushels, was 23 percent larger than the year before and 3 percent above the previous record of 1979. Wheat production, at 2.8 billion bushels, exceeded the 1980 record by 18 percent and was up 31 percent from two years earlier. Soybean production, at just over 2.0 billion bushels, was up 13 percent from the year before, but 10 percent below the 1979 record. District states contributed heavily to the bountiful harvest, accounting for 55 percent

of the corn production and 43 percent of the soybean crop. The combined corn and soybean harvests hit new highs in all District states except Indiana, where production was held down by a wet planting season.

Losses mounted for livestock producers

Most livestock producers suffered operating losses through most of 1981, continuing a trend that began in 1979. Cattle and hog prices were held below breakeven levels by record meat production and a softening in demand. A decline of 4 percent in pork production last year was offset by gains of 3 percent for beef and 6 percent for poultry.

Determining the reasons for the downturn in domestic demand for livestock products is difficult. Most analysts trace it to the effect of high interest rates on inventory stocking practices of processors and to shifts in consumer preferences. Changing consumer preferences may reflect secular trends associated with the maturing population (fewer big meat eaters) and the growing dietary issues linked to red meats. Recently, the depressing effects of these trends on meat purchases were reinforced by slow growth in real earnings and rising unemployment.

Livestock prices fluctuated widely again in 1981. Monthly hog prices ranged from \$39.50 per hundredweight in March to \$51 in August. For the year, hog prices averaged \$44.50, a tenth higher than the year before, but unchanged from the 1975-79 average. Monthly choice steer prices ranged from \$59.25 in December to \$68.25 in June. For the year, steer prices averaged \$64 per hundredweight, down 5 percent from 1980 and the lowest since 1978.

Dairy farmers enjoyed another relatively prosperous year in 1981. Their receipts were bolstered by a 6 percent increase in average milk prices and a 3 percent increase in milk production. Higher prices, in the face of record production and lackluster consumer demand, were made possible by the dairy support program.

During periods of surplus production,

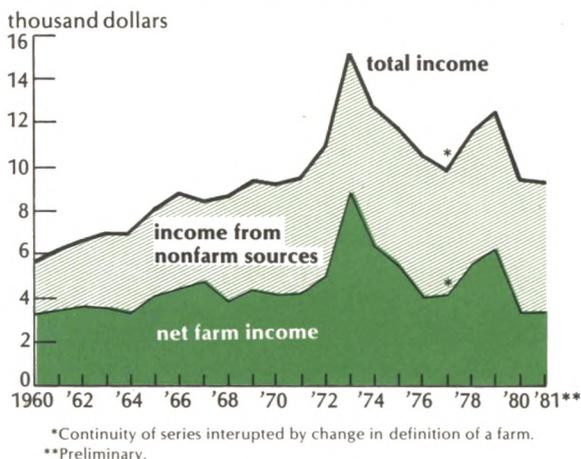
the federal government maintains the support price of milk by purchasing manufactured dairy products and removing them from commercial market channels. Such purchases have been very costly the past couple of years. In fiscal 1981, the government's net purchases of dairy products were equivalent to a tenth of all milk produced by farmers and cost more than \$2 billion. The cost would have been even greater except for special legislation that overrode a scheduled April 1 increase in the support price of milk. Costs may be even higher this year, but will likely decline over the next few years as a result of the comprehensive farm bill enacted in December that lowers the relative support level for milk.

Financial strains evident

With commodity prices trending lower throughout the year and higher interest expenses pacing the rise in production costs, farm earnings were depressed for the second consecutive year. Net cash income in the farm sector, which had declined 12 percent in 1980, is estimated to have fallen an additional 6 to 10 percent last year. Excluding changes in inventory values, net farm income fell 20 percent in 1980 and another 13 to 18 percent in 1981. After falling nearly 40 percent in 1980, net income after inventory adjustment rose last year, largely reflecting the swelling in inventories following the record 1981 crop harvest.

On a per farm basis, the purchasing power of farm sector earnings the past two years was 40 percent lower than the average for the 1970s and the lowest for any two consecutive years since 1959-60. That striking comparison is illustrative of the very low returns to labor, management, land, and other farm assets owned or provided by farm operator families. However, the comparison somewhat exaggerates the financial difficulties facing many farm families. Over the years, farm families have increasingly supplemented farm earnings with income from nonfarm sources. In fact, off-farm earnings of farm

Real per farm earnings of farm operator families declined in 1981



operator families have consistently exceeded farm earnings for several years. When the earnings of farm families from both farm and nonfarm sources are added together, their purchasing power, on a per farm basis, was no lower in the past two years than the levels that prevailed until the early 1970s.

The financial pressures created for most farmers by the severely depressed earnings the past two years are also cushioned by the large gains in farm asset values (mostly land) in the 1970s. The gains provided many farmers with substantial equity. Equity in farm sector assets now approximates \$400,000 per farm, almost four times the level of a decade ago. Although inflation has outstripped the rise in farm asset values the past two years, the real purchasing power of the equity in farm sector assets—on a per farm basis—is 75 percent higher than a decade ago.

Operating farm families own approximately 50 to 60 percent of the equity in assets of the agricultural sector. The equity, however, is not evenly distributed among all farmers. In general, young farmers, tenant farmers, and highly leveraged farmers have less equity than others. But most farmers do have substantial equity in their assets. During periods of depressed earnings, they can use

that equity—either by borrowing against it or by liquidating assets—to generate the cash needed to meet family living expenses and/or debt service requirements.

Capital markets weaken

Depressed earnings and record high interest rates led to further weakness in farmers' capital expenditures and in land values in 1981. Gross capital expenditures in the farm sector fell 7 percent in 1980. Further declines occurred last year, extending a slide that is unparalleled in recent decades. Much of the decline was concentrated in farm equipment. The Farm and Industrial Equipment Institute reported that unit retail sales of farm tractors with 40 or more horsepower were down 13 percent in 1981 from the year before, and down 25 percent from the strong performance in 1979. Combine sales, though up slightly in 1981, remained 17 percent below their level two years earlier.

Over the past two years, farmland values in the Midwest have exhibited wide fluctuations. Quarterly surveys conducted by the Federal Reserve Bank of Chicago showed an

unusual 4 percent decline in land values during the first half of 1980. But the downtrend reversed sharply in the second half of that year as commodity prices surged with the spreading impact of the drought. The uptrend continued through the summer of 1981, but at progressively smaller rates of gain. A sharp decline in the fourth quarter left District land values at year-end only nominally higher than the year before and up only 6 percent from two years earlier.

Farmland values have held up better in other parts of the United States than in the Midwest the past two years. Nevertheless, the increases have not kept pace with inflation and have fallen far short of the average annual gains of 14 percent recorded in the 1970s.

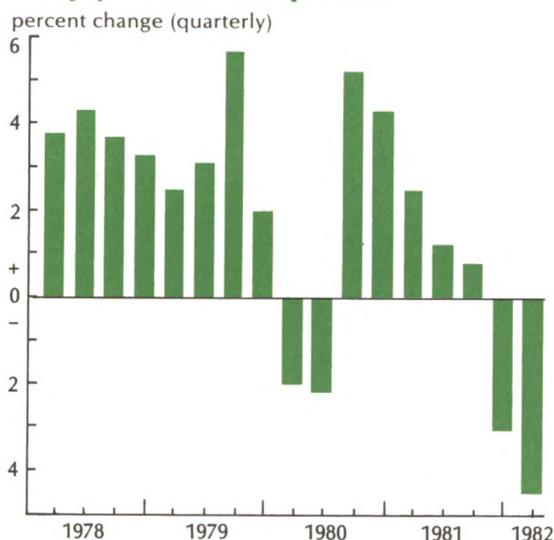
Debt growth slows

With high interest rates and low earnings discouraging capital expenditures and encouraging greater reliance on equity financing, last year's rise in farm debt again was modest. During the latter half of the 1970s farm debt rose at an average annual rate of 14 percent. The increase slowed to 10.5 percent in 1980 and edged up to only 11.5 percent last year.

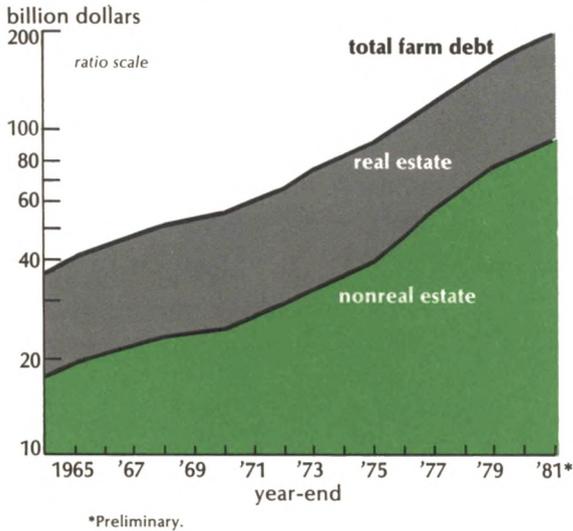
Federal land banks (FLBs) have dominated farm mortgage lending for years. (FLBs are borrower-owned cooperatives that lend almost exclusively to farmers). Over the past decade, their share of all farm mortgages held by reporting institutional lenders has risen from 39 percent to 59 percent. In 1981, the rise in farm mortgages held by FLBs exceeded 20 percent for the third consecutive year. In comparison, farm mortgages held by life insurance companies rose only 1 percent last year, while farm mortgages held by banks declined 3 percent.

In nonreal estate farm lending, activity at banks picked up slightly from the very sluggish pace of the year before. Nevertheless, farm loans held by banks rose only 4 percent last year, faster than the 2 percent rise the year before but well below normal. Outstandings

District farmland values were down sharply in last two quarters

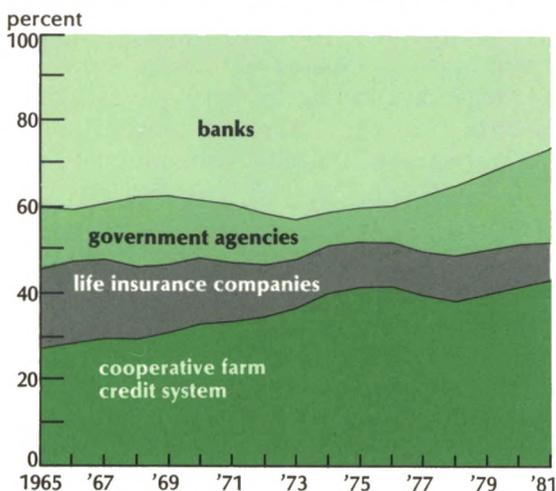


Growth in farm debt slowed the past two years



at Production Credit Associations (PCAs) rose 7 percent, the smallest rise since 1954. Non-real estate farm loans held by government agencies—the Farmers Home Administration (FmHA), the Small Business Administration (SBA), and the Commodity Credit Corporation (CCC)—rose a third in 1981. The faster growth in nonreal estate farm loan portfolios

Banks' share of farm debt has declined since mid-1970s, while that of government agencies has soared



held by government agencies continues a marked trend that has been evident since the mid 1970s. Government agencies now hold 31 percent of all nonreal estate farm debt held by reporting lenders, up from 14 percent a decade ago. The most rapid growth has occurred in the economic emergency and disaster loan programs sponsored by the FmHA and the SBA.

Pessimism prevails for 1982

Most analysts believe that farm commodity prices hit bottom in late 1981. But only modest increases are expected in the months ahead, particularly for crops. Consequently, despite an expected slowing of the persistent rise in production expenses, many analysts believe farm sector earnings will decline again this year. These prospects point to further moderation in the rise in retail food prices, but may compound the financial problems facing farmers.

For livestock producers, the year ahead promises some easing of the prolonged financial squeeze that has existed since mid-1979. Further declines in pork production portend a slight decline in per capita supplies of all meats in 1982. All livestock producers will benefit from sharply lower feed costs which, in turn, will tend to lower total costs of production. Although hog prices are expected to average considerably higher in 1982, continued sluggishness in consumer demand is likely to prevent any substantial rise in cattle prices. Despite the cutback in the dairy support program, the decline in earnings of dairy farmers will be cushioned by the drop in feed costs.

Much of the burden of the depressed farm earnings will be borne by crop farmers in 1982. Last year's record harvest and soft demand, especially from abroad, will lead to a huge increase in carryover stocks, particularly for corn and soybeans. Crop prices, though trending higher from the very depressed levels of late 1981, will probably remain well below cost of production for the next several months. Prospects for a slight upturn in crop

prices depend largely on government programs. Large amounts of corn under CCC loan and in the grain reserve could lead to tight "free-market" supplies unless prices rise to levels that encourage or permit farmers to repay the loans and market their grain. Moreover, a voluntary acreage reduction program will likely result in smaller crop plantings in 1982. Such a reduction in plantings would improve the prospects that this year's harvest will be less burdensome than that of 1981.

Vagaries of weather and the narrow margin between surplus and deficit production could quickly alter the outlook for agricul-

ture. But all indications now point to continued problems for the next several months. Any recovery in farm earnings in 1982 will be modest at best and a further decline seems more probable. The possibility of three consecutive years of depressed earnings indicates that more farmers will have to liquidate assets to meet debt service and/or family living expenses. Their ability to do so will depend on how well the value of land, which accounts for the bulk of farm sector assets, holds up in the face of the prolonged slide in farm income.

World economy is slow to improve

"Stagflation" again cast its pall over the world economy in 1981. For the second consecutive year, the economies of virtually all industrial countries experienced little or no economic growth, high and rising unemployment, and generally high rates of inflation. Because of the growing interdependence of all nations, the adverse economic conditions in the major industrial countries were gradually transmitted to the developing countries: sluggish demand in the industrial world curtailed exports of raw materials by the developing nations and depressed their prices. At the same time, inflation in the industrial world and higher prices of oil pushed up the cost of goods these nations import. Together, these forces produced a sharp worsening in the combined balance-of-payments deficit of the developing countries, increasing their dependence on external financing. Their international debt rose, while their capacity to service it diminished.

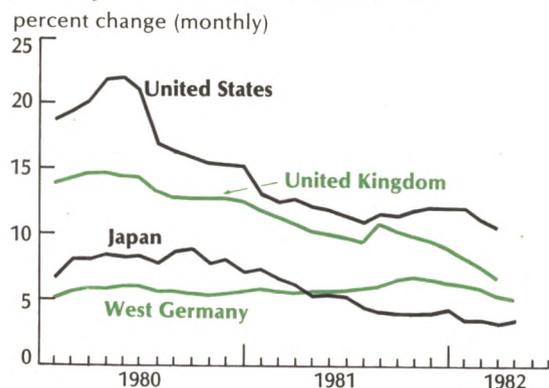
The problems encountered by the world economy in 1981 were further compounded by an outbreak of protectionist sentiment in a growing number of countries as they sought to protect their domestic economies from foreign competition. The sum total of these trends was the gloomiest outlook for the world economy that has been seen in many years.

The fight against inflation continues

Inflationary pressures have been intensifying throughout most of the industrial world for a number of years. Several factors contributed to this trend. The more than ten-fold increase in the price of oil and the "permissive" economic policies pursued by many countries head the list. But other factors also exerted their influence. In many cases, wages are now indexed to price increases, usually with a lag, thus assuring that labor costs will continue to rise even after prices have begun to slow. This increases the short-term costs in employment and output of any effort to slow inflation. Labor productivity has been reduced by the expansion of the proportion of employment in the comparatively low productivity service industries, by the increased participation in the labor force of inexperienced workers, and by the shift from energy intensive production to more labor intensive methods.

In 1981, governments in many countries began to come to grips with the inflationary problems. The restrictive monetary and fiscal policies adopted by many governments played an important role in moderating the rate of price advance during the year. A substantial weakening in commodity prices throughout the year presaged and contributed to the

Consumer prices decelerated in major industrial countries



deceleration in the overall price advance. From January to the end of the year, the price index for the primary internationally traded food commodities decreased more than 25 percent, while the prices of raw industrial materials declined about 15 percent. Although petroleum prices continued to exert upward pressure on the general price level during 1981, the pressure was much less severe than in 1980.

Reflecting these trends, the average rate of price increase for the 24 nations of the Organization for Economic Cooperation and Development (OECD) dropped from 11 percent in 1980 to about 9½ percent in 1981.

Stagnation persists in the industrial countries

Attempts to slow inflation resulted in a slowdown in economic activity in virtually all the industrial nations. The combined real GNP of the 24 industrial countries comprising the OECD increased only about 1¼ percent in 1981, a rate of increase that was essentially unchanged from 1980 and far below the average yearly gain of 3.5 percent between 1969 and 1979.

The sluggishness in economic activity created a substantial unemployment problem for the industrial countries. Unemployment rates throughout the area rose from 6.2 percent in 1980 to about 7¼ percent in 1981.

These trends are expected to continue in 1982, pushing the total number of unemployed in the OECD countries from 25 million in 1981 to over 28 million.

Balance-of-payments disequilibria ease

Depressed economic activity and intensified conservation efforts reduced the demand for oil in 1981, exerting strong downward pressure on oil prices. The resulting declines in prices and levels of consumption sharply reduced the earnings of the OPEC countries and cut their aggregate surplus on current account from \$110 billion in 1980 to about \$60 billion in 1981.

The beneficiaries of the reduced OPEC surplus have been the industrial countries. Their aggregate current account deficit fell from \$73 billion in 1980 to \$35 billion in 1981. In contrast, the non-oil developing countries were hit hard by external economic developments during the year. Not only did the sluggish economic activity in the industrial world depress the prices of their primary commodity exports, but rising import prices taxed their ability to pay for essential imports. As a consequence, their aggregate current account deficit increased from \$60 billion in 1980 to \$68 billion in 1981.

Banks in the industrial countries continue to finance a substantial share of these mounting deficits. By mid-1981, banks' claims on the non-oil developing countries totaled more than \$200 billion, up from \$193 billion at the end of 1980. Concern has arisen recently over the ability of banks to continue to finance these deficits and, especially with the current high level of interest rates, the ability of the developing countries to service a rising level of debt. The potential seriousness of these problems has prompted the IMF and the World Bank to enlarge their lending facilities so that, if necessary, they can take a more active role in financing the non-oil developing countries' increasingly oppressive debt burden.

Pressures for trade restrictions intensify

The depressed economic conditions here and abroad contributed importantly to an ominous development during the year—mounting sentiment worldwide for protection from foreign competition. Concrete actions growing out of this sentiment included: the antidumping duties imposed by Japan on U.S. aluminum allegedly dumped in the Japanese market; the “voluntary” export limits imposed by the Japanese government on auto exports to the United States, Canada, and the European Economic Community in response to threats of more severe formal import restrictions on autos by the governments of these countries; the antidumping and countervailing duty investigations by the U.S. government and American steel firms of alleged dumping and export subsidies in connection with steel exports from Europe, South Africa, and Brazil; the threatened imposition of duties by Western European countries on U.S. vegetable oils; and the restrictions placed on steel imports by the European Common Market.

The trade policy picture was not entirely negative, however. During the year certain trade restrictions were relaxed and the gradual implementation of the trade-promoting provisions of the 1979 Multilateral Trade Agreement proceeded on schedule. Nonetheless, the atmosphere of protectionism pervaded legislative deliberations throughout the world as corporations faced substantial losses, workers became unemployed or increasingly fearful of losing their jobs, and governments faced mounting social unrest and political pressures to “do something about imports.”

U.S. balance of payments improves

Divergent trends were evident in U.S. international trade during 1981. Reflecting sluggishness in economic activity worldwide, the growth in the value of U.S. merchandise trade slowed dramatically. Exports increased

less than 6 percent compared with more than 20 percent in 1980. Imports increased about 6 percent compared with about 18 percent in 1980. The trade deficit, which had declined for two consecutive years to \$25.3 billion in 1980, increased to \$27.8 billion in 1981.

What strength there was in U.S. exports came primarily from the increased value of machinery shipments and, to a lesser degree, agricultural shipments. Nonetheless, both sagged late in the year as the volume of shipments declined and prices weakened. Much of the deceleration in the growth of imports in 1981 was concentrated in petroleum imports, the value of which declined about 2 percent to \$77 billion (the volume of imports declined about 13 percent). Non-oil imports increased 9 percent from the 1980 level, compared with a 13 percent increase in 1980.

U.S. trade was also influenced by a sharp appreciation of the dollar relative to other major currencies during the first eight months of the year. The appreciation made foreign goods cheaper in terms of the dollar and U.S. goods more expensive in terms of foreign currencies, thereby tending to boost imports and reduce exports. The result was a rise in the U.S. trade deficit.

Despite the increased merchandise trade deficit in 1981, the U.S. current account balance—which in 1980 had recorded its first surplus since 1976—continued to improve. It registered a surplus of \$6.6 billion in 1981, up sharply from the \$3.7 billion surplus in 1980. An improvement in the balance in the services account in recent years has more than offset the merchandise deficit. The services surplus exceeded \$41 billion in 1981, well above the services surplus of about \$25 billion in 1978 when the deficits on merchandise trade (\$33.8 billion) and current account (\$14.1 billion) were at record levels.

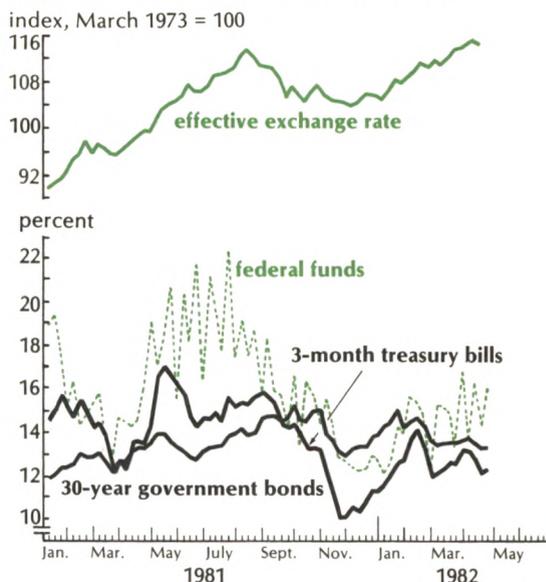
The strength in the services account has been derived primarily from the receipts of income on U.S. assets abroad, which have greatly exceeded income payments to foreigners on their assets in the United States. Net income from direct investment typically has been a major contributor to the services

surplus. While income from direct investment abroad continued to be an important component of the services surplus in 1981, much of the improvement in the services account for the year came from an increase in net receipts to U.S. firms and individuals derived from investments in foreign financial instruments. Much of the increased investment was reflected in the substantial increase in claims on foreigners reported by U.S. banks during the year.

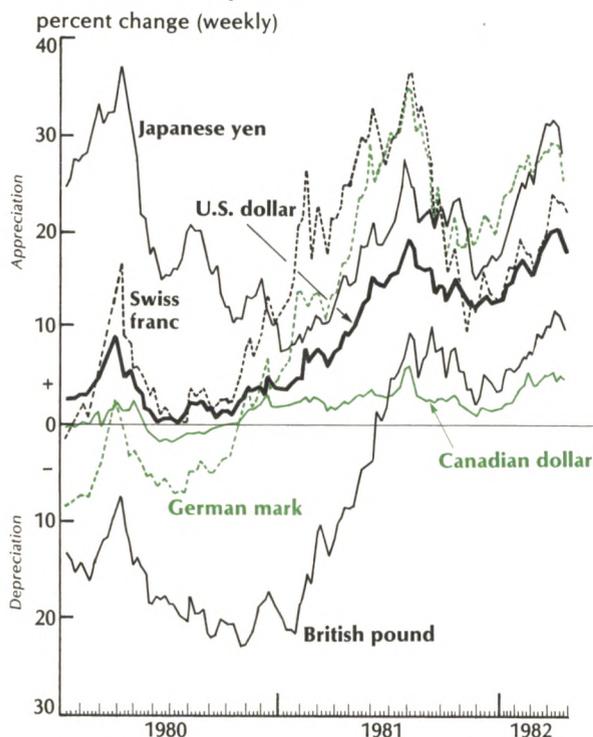
The dollar was strong

Movements in exchange rates are normally associated with changes in one or more fundamental factors such as the current account balance, relative rates of inflation between countries, relative rates of economic

Value of the dollar moved in tandem with U.S. interest rates



The dollar was strong through 1981 and early 1982*



*Percentage change in the value of the U.S. dollar against foreign currencies, from a November 1, 1978 base.

growth, and considerations of political stability. Changes in some of these factors apparently played a role in the movement of the dollar relative to other currencies in 1981. However, the primary cause of the extraordinary strength of the dollar during the first eight months of the year and the subsequent weakening later in the year appears to have been the movement in U.S. interest rates relative to those abroad. During 1980 the value of the dollar gyrated widely in concert with the broad fluctuations in the differential between U.S. and foreign interest rates.

The differential widened after midyear 1980 as U.S. interest rates increased and remained at a high level through midyear 1981. Reflecting this, the dollar strengthened from its low level in 1980 and by August 1981 had attained record highs against the Canadian dollar, French franc, and Italian lira, and a five-year high against the West German mark. On a trade-weighted basis (taking into account the relative importance of individual foreign currencies, based on their volume of trade with the United States) the dollar had

appreciated 20 percent from its 1980 low. Increases vis-à-vis specific currencies were: 10 percent against the Canadian dollar, 54 percent against the French franc, 59 percent against the Italian lira, 48 percent against the German mark, 19 percent against the British pound, and 38 percent against the Japanese yen.

As U.S. interest rates declined later in the year, the dollar weakened. Another factor contributing to the weakening of the dollar was the shift in sentiment regarding the outlook for the U.S. economy as economic activ-

ity declined in the fourth quarter and unemployment continued to increase. On the other hand, unsettled political conditions in Poland and the Middle East apparently served to strengthen the dollar as foreign investors sought a “safe” currency for their investments. At the end of November the trade-weighted value of the dollar had declined about 10 percent from its 1981 high but it moved upward again in December. The dollar closed the year about 8 percent below its August high and 12 percent above its 1980 low.

Fiscal policy—a new approach

The new Reagan administration moved to honor the pledges made during the election campaign concerning fiscal policy. Specifically, the administration introduced legislation designed to:

1. reduce tax rates on personal income.
2. provide accelerated depreciation allowances and other incentives for business investment.
3. slow the growth of all areas of government spending except defense.
4. gradually reduce the deficit, aiming at a balanced budget in fiscal 1984.

The key phrase in the new administration’s approach to fiscal policy was “supply side” economics. A major thesis of supply side economics is that the growth of the economy has been hindered by high marginal tax rates that strongly favor consumption over investment and reduce the incentive to work. By reducing marginal tax rates and providing other investment incentives, the administration hoped to guide the economy into an extended period of strong growth. It was expected that the immediate loss in revenues resulting from the lower rates would be recovered in a

few years because the total national income would be substantially larger than it would have been without these incentives for investment.

There was a second aspect to the Reagan administration’s view of government spending. It believed that the federal government had assumed responsibility for many activities that are properly the function either of state and local government or of the private sector. Among the most important and controversial features of the first Reagan administration budget were its proposals that spending for these programs be reduced, transferred to the local level, or eliminated. The major budget category to be spared sharp spending cuts was national defense, an area in which the administration believes the United States has lagged dangerously behind the Soviet Union. Consequently, substantial growth in real defense expenditures was called for over the next several years.

Little impact in fiscal 1981

The new administration had virtually no impact on fiscal 1981, which had begun in October 1980. The focus has been primarily on fiscal 1982 and beyond. Although the administration revealed its plans in a series of messages during March and April of 1981, the

**Estimated and actual budget figures for
fiscal year 1981**
(billions of dollars)

	Carter estimate	Reagan estimates		Actual
	January 1981	March 1981	July 1981	September 1981
Receipts	607.5	600.3	605.6	602.6
Outlays	662.7	655.2	661.2	660.5
Deficit	55.2	54.9	55.6	57.9
Off-budget	23.2	23.6	24.0	21.0
Total deficit	78.4	78.5	79.6	78.9

length of the congressional budget process made it impossible to alter the 1981 program. In its January budget message, the Carter administration had forecast receipts of \$607.5 billion and outlays of \$662.7 billion for fiscal 1981, giving a deficit of \$55.2 billion. The reestimates by the Reagan administration in March and July were very similar. The actual outcome showed receipts of \$602.6 billion and outlays of \$660.5 billion. The resulting deficit of \$57.9 billion was slightly below the \$59.6 billion deficit incurred in fiscal 1980. However, if the \$21 billion of off-budget borrowing in fiscal 1981 is included, the total deficit was \$78.9 billion, an all-time record.

Virtually all off-budget outlays consist of loans made by government departments and agencies under a wide variety of programs. These loans are sold to the Federal Financing Bank, so that, within the budget, the outlays are offset by the proceeds. The Federal Financing Bank, in turn, borrows the money from the Treasury, but these borrowings have not been included in the Unified Budget. They are, however, part of the total the Treasury must raise each year to meet the cost of government.

Implementing the Reagan program

The new administration had remarkable success in getting the tax portion of its program approved by the Congress. The Economic Recovery Tax Act became law on August 13. In the legislative process the new tax law underwent a number of changes in

detail regarding the timing and the exact shape and magnitude of its major provisions, and the final version contained several additions that the President had wished to defer for later consideration. But the basic objective of a general tax reduction designed to favor saving and investment was achieved, and marginal personal income tax rates above the 50

percent bracket were cut sharply. Business taxes were reduced primarily by providing more rapid amortization of investment and by making the investment tax credit transferable by lease arrangements. The most recent administration estimates are that these changes reduced receipts by \$38.3 billion in 1982, \$91.6 billion in 1983, \$139.0 billion in 1984, and \$176.7 billion in 1985.

Getting the Congress to act on the spending cuts proved to be more difficult than getting the tax revisions passed. When the fiscal year ended on September 30, very little had been completed in passing the necessary authorization and appropriation bills. Although both houses passed the first budget resolution—which adopted in principle all that the administration had asked for—that resolution has no legal status as far as actual spending is concerned. During early October, most of the government was functioning under a continuing resolution which permitted continued spending at the fiscal 1981 rate. This was extended to year-end, but even then much work was undone. Just before the Christmas recess, a third continuing resolution was passed running to September 30, 1982. The Congress still had to complete appropriations action and pass a second budget resolution to complete action for this fiscal year.

Reworking the Reagan program

No revised estimates for fiscal 1982 were published by the administration prior to re-

Principal provisions of the Economic Recovery Tax Act of 1981

Personal income tax provisions

1. Across-the-board reductions in personal income tax rates from 1980 rates:

1981	1¼ percent
1982	10 percent
1983	19 percent
1984 and after	23 percent

2. Reduction of maximum rate to 50 percent.
3. Indexation by the Consumer Price Index of bracket ranges, the zero bracket amount, and the personal exemption beginning in 1985.
4. Introduction of "Marriage Tax" deduction for two-earner families up to a maximum of \$1,500 in 1982 and \$3,000 in subsequent years.
5. Authorization of IRA accounts for all workers, permitting tax-free saving of up to \$2,000 per year (\$2,250 with non-working spouse). Raising of Keogh plan maximum to \$15,000.
6. Authorization of All Savers Certificates, providing tax-exempt interest at 70 percent of Treasury bill rate up to \$1,000 per individual or \$2,000 per couple. (Expires December 31, 1982.)

Estate and gift taxes

1. Elimination of taxes on inheritance (or gift) to spouse in any amount.
2. Gradual increase in the tax credit on estates from the \$47,000 of current law to \$192,800 in 1987. (This means that estates up to \$600,000 will become tax-exempt by 1987.)
3. Reduction of maximum estate tax rate from 70 percent to 50 percent in steps of 5 percent a year.
4. Raising of gift tax exclusion from \$3,000 to \$10,000 effective January 1, 1982.

Business tax provisions

1. Classification of all personal property into four classes which may be written off over 3, 5, 10, or 15 years, respectively. (Except for public utility equipment, virtually all business equipment is in either the 3- or 5-year class).
2. Authorization to write off real property in 15 years using 175 percent declining balance.
3. Liberalization of leasing provisions to permit transfer of unused investment tax credits and depreciation between firms.

The changing face of federal spending plans

	Fiscal 1981	Fiscal 1982			Fiscal 1983
	Actual	Carter Estimate	Reagan Estimates		January '82
		January '81	Marth '81	January '82	
		<i>(billion dollars)</i>			
Receipts	599.3	711.8	650.3	626.8	666.1
Outlays	657.2	739.3	695.3	725.3	757.6
Total deficit, including off-budget	78.9	45.8	61.7	118.3	107.2
Outlays by function					
National defense	159.8	184.4	188.8	187.5	221.1
International affairs	11.1	12.2	11.2	11.1	12.0
General science, space, technology	6.4	7.6	6.9	6.9	7.6
Energy	10.3	12.0	8.7	6.4	4.2
Natural resources, environment	13.5	14.0	11.9	12.6	9.9
Agriculture	5.6	4.8	4.4	8.6	4.5
Commerce and housing credit	3.9	8.1	3.1	3.3	1.6
Transportation	23.4	21.6	19.9	21.2	19.6
Community, regional development	9.4	9.1	8.1	8.4	7.3
Education, training, social services	31.4	34.5	25.8	27.8	21.6
Health	66.0	74.6	73.4	73.4	78.1
Income security	225.1	255.0	241.4	250.9	261.7
Social Security	138.0	159.6	154.8	154.6	173.5
Other	87.1	95.4	86.6	96.2	88.2
Veterans benefits	23.0	24.5	23.6	24.2	24.4
Administration of justice	4.7	4.9	4.4	4.5	4.6
General government	4.6	5.2	5.0	5.1	5.0
Fiscal assistance (S&Ls)	6.9	6.9	6.4	6.4	6.7
Interest	82.5	89.9	82.5	99.1	112.5

lease of the 1983 budget. However, estimates by non-government economists projected much higher deficits for both 1982 and 1983 than the last official forecasts, released in July, had indicated. The President's budget message on February 8, 1982 confirmed these private estimates. The administration's estimate of the total deficit for 1982, including off-budget borrowing of \$19.8 billion, almost doubled from \$61.7 billion to \$118.3 billion. This massive revision had three major sources, all related to the poor performance of the economy relative to the assumptions underlying both the March and July estimates. On the revenue side the major factor was a lowering of the estimated receipts from the corporate income tax by about \$20 billion. On the outlays side there were two major increases. Interest cost estimates were raised by over \$16 billion, and income security programs, pri-

marily unemployment insurance payments, were raised about \$10 billion from the earlier estimates.

The hope of producing a balanced budget during the present administration's current term in office has evaporated. The deficit for fiscal 1983 is projected at \$91.5 billion. Longer range forecasts show continuing deficits, though progressively smaller ones, through at least 1987.

The budget outlook

Virtually every member of the Congress who has spoken out publicly on the budget message has been insistent that the deficits must be reduced. However, except for minor alterations, it does not appear possible to do very much about fiscal 1982. Furthermore, a detailed examination of both the 1982 and

1983 budgets makes clear that there are few available categories in which changes can be made that are large enough to have any measurable impact. Taxes could be raised and defense spending, income security programs, and, perhaps, veterans benefits could be reduced. No other categories are large enough in total that even drastic cutting, say as much as 20 percent, would have a significant impact on the deficit.

Of the three large outlay categories, only defense is at all likely to be reduced by more than a token amount in an election year. Nor does it seem likely that any major tax increase is going to be passed so soon after the tax reduction bill was enacted.

Of the various means available for increasing revenues, the most likely to be adopted are the introduction of some new user fees, the tightening of leasing rules just relaxed by the 1981 tax changes, and the revision of several minor provisions of the tax laws. The combined effect of these changes would be to raise revenues by about 5 percent.

With military spending already under attack, the projected 18 percent increase for 1983 may be spread into future years. However, a final deficit total for fiscal 1982 which is as much as \$10 billion below the present forecast of \$98.6 billion is not likely to be achieved, and, in fact, an even higher figure is not an unlikely outcome.

Financial markets and monetary policy

Conditions in financial markets during 1981 reflected not only current economic conditions but also uncertainties about future trends in light of the fundamental shift in the strategy of economic policy. The new focus on long-run reforms in public policy to stimulate investment, increase productivity, and promote economic growth—combined with continued monetary restraint to reduce inflation—made transitional problems inevitable. Inflation expectations built up over almost two decades cannot be erased quickly. Yet a change in those expectations is a necessary condition to the success of a program that depends heavily on increased private saving to finance expanding investment expenditures.

In 1981, the Federal Reserve continued to pursue monetary objectives consistent with lowering the rate of inflation. For the year as a whole, growth in the narrow concepts of money was well below that for 1980 and somewhat less than intended, while the broader measures grew a bit faster than the targeted pace. These divergences, as well as the uneven pattern of growth within the year, largely reflect shifts by consumers to new financial instruments and changing cash

management practices in an environment of high and volatile interest rates.

Given the Fed's policy of supplying non-borrowed reserves at a rate believed consistent with the desired rate of money growth, the fluctuations in the level and pattern of interest rates were largely determined by variations in private credit demand. Unexpectedly strong economic activity early in the year led to relatively heavy borrowing and kept short-term interest rates high. The reluctance of investors to commit funds for long periods at fixed rates resulted in record yields in the bond markets, discouraging businesses from funding short-term debt. High market rates also accelerated the flow of funds out of instruments still subject to interest rate ceilings. For example, shares in money market mutual funds rose by more than \$100 billion during the year, part of which flowed back into large bank CDs.

Thrift institutions and smaller banks experienced very little growth, but their average cost of funds rose sharply as they were forced to rely on time certificates of deposit and the new interest-bearing NOW accounts in place of traditional funding through demand and savings accounts. Because these

institutions hold a large proportion of their assets in the form of mortgages and other fixed-rate assets, they experienced severe pressure on earnings. A number of them failed, and an even greater number—including some of the largest thrift institutions in the country—were kept operating only through merger into other institutions.

To ease this problem, the Federal Reserve arranged to provide extended credit to thrift institutions and banks experiencing sustained liquidity pressures at a rate varying with the duration of borrowing. As much as \$450 million of credit was outstanding under this provision at one time last year. In these circumstances, the Depository Institutions Deregulation Committee proceeded slowly in carrying out the deregulation of interest rates mandated by the Monetary Control Act of 1980. Meantime, nonbank financial institutions continued to expand their role in providing financial services. The innovations introduced by these institutions, together with shifts of both savings and transaction balances, increased the problems of interpreting and controlling the monetary aggregates.

Monetary aggregates and monetary policy actions

At its February meeting, the Federal Open Market Committee (FOMC) agreed that the achievement of its objectives would be furthered by somewhat slower monetary and credit growth than had been experienced in 1980. Specifically, the FOMC adopted the following ranges of growth for the monetary and credit aggregates from fourth quarter 1980 to fourth quarter 1981: 3½ to 6 percent for M-1B, 6 to 9 percent for M-2, 6½ to 9½ percent for M-3, and 6 to 9 percent for total bank credit.¹ It was recognized that some of the observed growth in M-1B during 1981 would result from shifts of funds from savings deposits into NOW accounts following the nationwide introduction of such accounts on December 31, 1980. Because it was believed that some of these funds are held as investments, rather than as transactions balances,

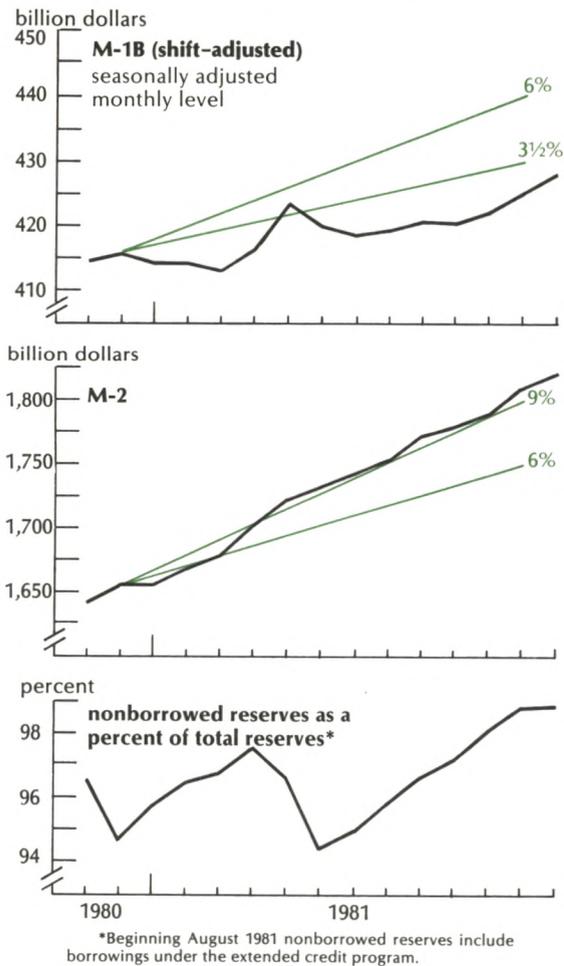
the actual M-1B figures were adjusted downward to take these shifts into account.

For the year, shift-adjusted M-1B grew 2.3 percent, well below its 1981 range. (Unadjusted M-1B also grew slower than expected.) The slowdown in M-1B growth in 1981 continued the deceleration of monetary growth that began in 1979. After peaking at 8.3 percent in 1978, M-1B growth slowed to 7.5 percent in 1979 and 6.6 percent in 1980 (adjusted for shifts to NOW accounts). Growth rates of the broader monetary aggregates, however, not only exceeded their 1981 ranges but were higher than in the preceding year: M-2 grew 9.5 percent in 1981 compared with 9.1 percent in 1980, while M-3 expanded 11.4 percent in 1981 compared with 9.9 percent in 1980. Bank credit grew at a rate of 8.8 percent in 1981, within its range but somewhat faster than its 8 percent rate of growth in 1980 when the credit restraint program was in place.

Short-run monetary policy actions during the year were designed to keep monetary growth in line with the established ranges for 1981. Since October, 1979, the Fed has used a reserves targeting approach in seeking to achieve desired monetary growth. Although, under the current lagged reserve accounting system, the Fed cannot control total reserves directly, it can affect the proportion of total

¹A 3 to 5½ percent range, adjusted for shifts to NOW accounts, was also established for M-1A, which was defined to include currency held by the public, demand deposits at commercial banks other than those due to domestic banks, the U.S. government, and foreign banks and official institutions, and travelers checks of nonbank issuers. The M-1A measure, however, did not play an important policy role during 1981, and was dropped beginning in 1982. M-1B, which in 1982 is designated as M-1, includes M-1A plus other checkable deposits consisting of negotiable order of withdrawal (NOW) and automatic transfer service (ATS) accounts at banks and thrift institutions, share drafts at credit unions, and demand deposits at mutual savings banks. In 1981, M-2 was defined to include M-1B plus overnight repurchase agreements (RPs) and Eurodollars, money market mutual fund (MMMF) shares, and savings and small time deposits at banks and thrift institutions; in early 1982, retail RPs were included and institution-only MMMF shares were excluded from M-2. M-3 includes M-2 plus large time deposits at banks and thrift institutions, and term RPs. Growth rates given in the text are based on the early 1982 revisions and redefinitions of monetary aggregate data.

Reserve mix responded to deviations from monetary growth targets



reserves supplied as nonborrowed reserves. Under this approach, when monetary growth falls below (above) its desired path, a greater (lesser) proportion of the total reserves needed to support targeted monetary growth is provided as nonborrowed reserves.² Increasing the proportion of reserves supplied as non-

²Because borrowings under the extended credit program do not have to be repaid as promptly as traditional adjustment borrowings, their money market impact is similar to that of nonborrowed reserves and they were treated as such in implementing monetary policy during 1981.

borrowed reserves reduces the need for banks to borrow at the discount window and, thus, lowers the effective cost of borrowing. This occurs because a major component of the cost of borrowing—the nonpecuniary cost associated with the surveillance exercised by Fed discount officers—varies directly with the amount and duration of borrowing. As a consequence, so does the total effective cost of borrowing—i.e., the nominal discount rate plus the nonpecuniary cost of borrowing. Thus, the higher the level of nonborrowed reserves—and therefore the lower the level of borrowing—the lower is the effective cost of funds to banks and the more attractive it is for them to purchase additional earning assets, expanding the money supply. Changes in the effective cost of borrowing are immediately transmitted to banks that do not borrow at the discount window via changes in the federal funds rate.

Through the first quarter of 1981, growth in shift-adjusted M-1B was below its annual range while growth in M-2 was within its range. To encourage more rapid monetary expansion, the Fed increased the proportion of total reserves supplied as nonborrowed reserves. These short-run policy actions contributed to the decline in short-term interest rates during the first quarter.

Monetary growth accelerated sharply in April, with shift-adjusted M-1B moving into its annual range and M-2 moving above its range. In response, the Fed became less accommodative in supplying nonborrowed reserves, and the proportion of total reserves provided as nonborrowed reserves declined through May. In addition, the Fed raised the discount rate from 13 percent to 14 percent and increased the surcharge imposed on large, frequent borrowers from 3 percent to 4 percent in early May.

In reconfirming its 1981 monetary and credit aggregate growth ranges in July, the FOMC noted that the shortfall in M-1B growth reflected a shift in the public's holdings of liquid assets in response to rising yields on instruments not subject to interest rate ceilings. For example, shares of money market

mutual funds increased almost \$50 billion dollars from December 1980 to June 1981. Because of these strong flows into components of the broader aggregates, and the likelihood that such aggregates would be in the upper parts of their ranges, the FOMC expressed a willingness to accept growth in shift-adjusted M-1B toward the lower end of its 1981 range.

For the remainder of the year, shift-adjusted M-1B remained below its 1981 range while M-2 fluctuated around the upper limit of its range. Policy actions were generally aimed at encouraging somewhat more rapid growth in M-1B while keeping M-2 close to or within its 1981 range. From June through November, the Fed increased the proportion of total reserves supplied as nonborrowed reserves. In addition, in a series of steps beginning in September, it lowered the basic discount rate to 12 percent and eliminated the surcharge. In belated response to these policy actions, monetary growth accelerated in November and December.

The growth of M-2 relative to M-1B was also affected by a number of developments that enhanced the ability of depository institutions to compete for small time deposits. Effective August 1, the Deregulation Committee removed the cap on rates payable by depository institutions on 2½-year Small Savers Certificates. Beginning October 1, depository institutions were allowed to offer All Savers Certificates paying interest at a rate related in a specified way to the one-year Treasury bill. Interest on these certificates is tax-exempt up to \$1,000 for individuals and up to \$2,000 on a joint return. Beginning November 1, the maximum rate payable on six-month Money Market Certificates was tied to the higher of the average discount rate on six-month Treasury bills established by the latest auction or the average of the four most recent auctions. Also, beginning December 1, depository institutions could offer Individual Retirement Accounts (IRAs) and Keogh plans having maturities of 18 months or more completely free of interest rate ceilings. Such IRA accounts would be available in 1982 to all employed individuals.

Interest rates high and volatile

On average, interest rates were higher in 1981 than in 1980. Although fluctuations within the year were again wide, they were less extreme than the swings associated with the imposition and subsequent removal of the 1980 credit restraint programs. While the high levels of rates generally—and long-term rates in particular—reflected expectations of a continued high rate of inflation, they may also have been affected by investors' efforts to compensate for the uncertainty associated with the rate volatility of the past two years. Short-term rates undoubtedly reflected, in addition, the Fed's persistence in pursuing its goal of a gradual deceleration in monetary growth.

In October, long-term yields reached new record highs and money-market yields reached levels very close to the record highs set in 1980. Monthly average bond equivalent yields on three-month Treasury bills reached a May high of 17.23 percent and finished the year at 11.35 percent, about 5 percentage points below their level at year-end 1980. At the other end of the maturity spectrum, monthly average yields on 30-year Treasury securities ranged from a low of 12.14 percent in January to a high of 14.68 percent in October and ended 1981 at 13.45 percent—about 1 percentage point above the December 1980 level.

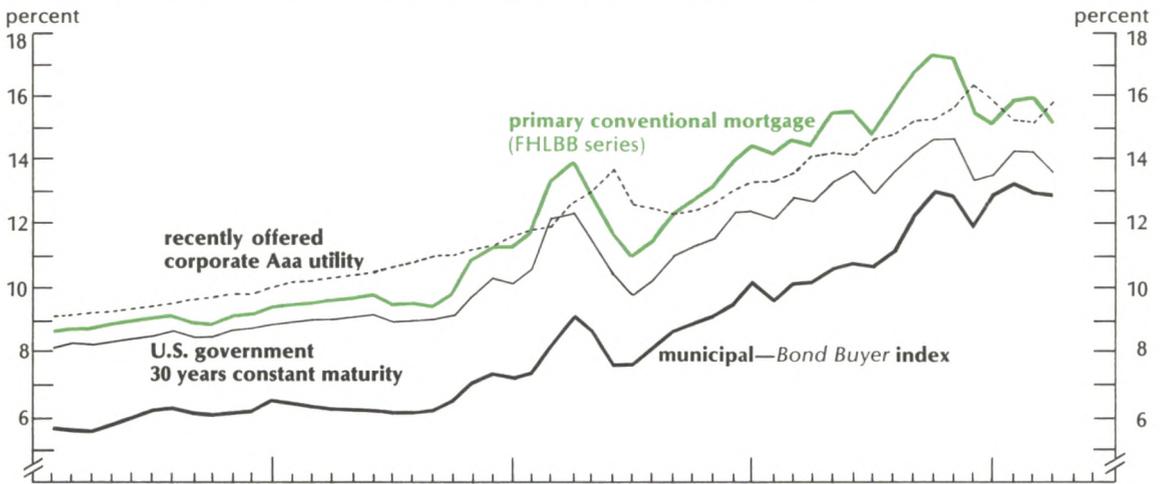
The swings in interest rates in 1981 were roughly coincident with efforts to return money growth to the desired path following large and prolonged deviations above or below the targeted ranges. Early in the year, money-market interest rates were pushed downward as the Fed increased the rate at which it supplied nonborrowed reserves in response to weak growth in the narrowly defined shift-adjusted monetary aggregates. This downward trend in short-term interest rates was sharply reversed in April when M-1B growth rapidly accelerated and the Fed again slowed the growth of nonborrowed reserves. The ebullience of the economy in the first quarter of 1981 heightened investor

concern about inflation and put upward pressure on interest rates. After peaking in May and June, most short-term rates trended lower over the remainder of 1981 as a slowdown in economic activity again led to sluggish growth in narrowly defined money.

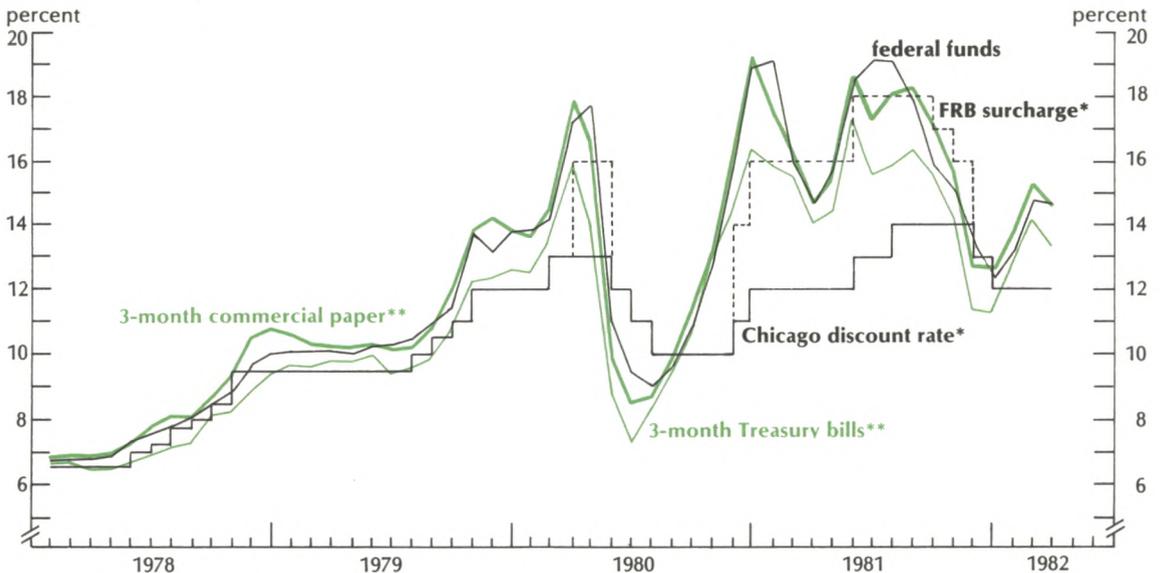
The behavior of longer-term yields followed a somewhat different pattern. Interest

rates on bonds trended irregularly upward, with 30-year Treasury securities reaching a weekly average record high of about 15 percent in early October. Following the October peak, long-term interest rates declined sharply in the face of mounting evidence of a significant slowdown in economic activity, a substantial decline in the rate of inflation, and the

Long-term interest rates declined from recent highs . . .



. . . with short-term rates following a similar but more pronounced pattern



*Last day of the month.
**Bond equivalent yields.

increasing momentum of the fall in short-term rates.

By mid-October short-term rates had declined enough to restore a positive yield spread between 30-year and three-month maturities of Treasury securities for the first time since September 1980. In the past, a widening in the positive spread between long- and short-term interest rates has often been associated with declining long-term rates.

In the tax-exempt sector, yields on state and local securities not only hit record highs, but rose relative to yields on comparable taxable securities. Among the factors combining to produce this relative increase in yields on municipal securities were: (1) weak demand for these issues by their major traditional buyers—commercial banks and casualty insurance companies; (2) increased competition from alternative tax-exempt investments such as the All Savers Certificate introduced in October; and (3) higher borrowing resulting from anticipated cutbacks in federal funding of state and local governmental services and increased efforts to take advantage of the tax-exempt status of industrial revenue bonds and mortgage bonds.

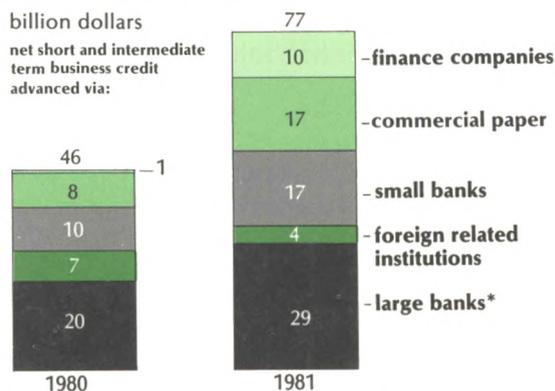
The record high yields in the fixed-income markets occurred in an environment of relatively weak real economic growth, moderating inflation, and declining private sector credit demands relative to nominal GNP—ordinarily an environment conducive to declining interest rates. The net amount of funds raised in the credit markets by businesses and households declined in the second half of the year and the amount of Treasury financing was actually less than a year earlier. However, skepticism that federal expenditure would be reduced enough to offset the effects of the scheduled tax cuts was a major element depressing the bond markets throughout the year. Investors' fears intensified at year-end as the recession dashed all hopes of reducing the federal deficit according to plan. The perception that new pressures on financial markets would develop as large deficits combined with an expected resurgence of private credit demands was strength-

ened by the release of revised projections of the deficit for fiscal 1982. Most of these projections centered around \$100 billion, with relatively modest reductions expected in succeeding years. The widespread concern over these figures was reflected in the rebound in interest rates that began in December.

Shifts in credit structure

The total amount of funds raised in the credit markets was a little greater in 1981 than in 1980, but fell short of the record 1979 financing volume. Given the significantly higher price level, the real volume of funds raised was sharply lower than in 1980. Most of the shifts in the composition of credit and in the market shares of different types of institutions that had characterized 1980 continued in 1981. Savings continued to flow into instruments paying market-determined rates. As the year progressed, individuals reduced their purchases of consumer durables and houses in response to high financing costs and concern over the economic outlook. Net extensions of consumer credit, though up sharply from their low levels under the credit restraint programs in 1980, slowed after the first quarter, while the savings rate rose. Mortgage lending, which was well below the depressed

Commercial paper's share of business credit was up sharply



*Banks with domestic assets of \$750 million dollars or more at the end of 1977. Includes loans to U.S. residents booked at foreign branches of U.S. banks. Banking data for the end of 1981 have been adjusted to eliminate the shifting of assets from domestic banking offices to International Banking Facilities.

1980 pace in the first half, declined further in the second half.

Although businesses raised somewhat more funds, net, in the credit markets than in 1980, they concentrated their borrowing in short-term debt instruments, given the high rates and unreceptive conditions in the securities markets. Short- and intermediate-term business debt rose an estimated \$80 billion, about 70 percent more than in 1980.

Bank loans to business borrowers by domestic offices of both U.S. and foreign banks rose more than 13 percent in 1981, compared with 12 percent in 1980. Business loans expanded more rapidly at small and medium-sized banks than at large money center banks or U.S. branches and agencies of foreign banks. To a considerable extent this was attributable to the greater access of large firms to the commercial market paper; outstanding commercial paper of nonfinancial issuers rose 45 percent last year. Business loans extended to U.S. corporations by foreign branches of large U.S. banks were also

up sharply, largely because the cost of funds from these sources was generally less than that of bank loans based on the bank prime rate. To meet competition from foreign banking institutions and the commercial paper market, many large domestic banks made credit available to large national market customers with options for alternative pricing based on market rates or on the cost of funds.

With liabilities shorter and rates more volatile, financial institutions were under growing pressure to keep assets returns in line with the cost of funds. Most business loans were written with floating rates, and few mortgage lenders were willing to put more fixed-rate loans on their books. At the same time, the high yields available on short-term obligations and continued concerns about inflation discouraged investors from making long-term commitments. All of these factors contributed to heavier reliance on short-term debt. Borrowers must now face the problems of rolling it over in the future or refinancing in long-term markets when conditions permit.

Prelude to recovery

In the summer of 1982 the American economy remained in the grip of a stubborn recession. However, the rate of decline appeared to have slowed and most observers believed that an upturn was at hand. The decline in total activity that began in mid-1981 was not nearly as steep as in various past cycles, notably in late 1974 and early 1975. Nevertheless, morale was at a lower ebb than at any time since the 1930s. Several unusual characteristics of the 1981-82 recession help to account for this extreme pessimism:

- The recession followed closely on the heels of the recovery from the 1980 decline.
- The unemployment rate, which was relatively high at the onset of the recession, later increased to a postwar record high.
- The downturn affected all sectors of the economy—agriculture, manufacturing, min-

ing, construction, transportation, public utilities, trade, finance, and government.

- Real interest rates (nominal interest rates less the rate of inflation) rose to unprecedented heights, placing a heavy burden on borrowers.
- Despite efforts to cut spending, the federal deficit was expected to remain in the \$100 billion range for years to come.
- Forced closings, liquidations, and bankruptcies soared to the highest levels since the 1930s.
- Intense foreign competition, aided by the high value of the dollar, stimulated imports and discouraged exports.

Signs of revival

Despite the unrelieved gloom in some sectors in early 1982, there were encouraging

signs that the worst was over. A paramount objective of economic policy was being achieved. Price inflation had been dampened to a greater degree than the most optimistic forecasts had envisaged. In early spring both the consumer and producer prices indexes declined, reversing an uptrend that had been virtually uninterrupted since the early 1960s. Doubtless price inflation will revive once recovery begins, but the specter of double-digit inflation has receded.

Price competition is present to a degree unknown in recent decades. Deregulation of the transportation industries has been a major factor in bringing this about and has resulted in substantial savings to customers. Similar trends are underway in the public utility and financial services sectors.

Another promising sign was the increased willingness of labor organizations to help restore financial health to distressed industries by renegotiating the terms of existing contracts. In some cases, unions agreed to modify restrictive work rules that hamper productivity and increase production costs.

Inventory liquidation, at a \$40 billion annual rate in the first quarter, reduced excess stocks and set the stage for higher production to keep supplies in line with current demand. Ample supplies of all types of goods and services, including energy, provided assurance that bottlenecks would not impede the expected rise in activity.

Consumer spending remained depressed in the spring relative to after-tax income, and consumers remained cautious in using installment credit lines. But backlogs of demand for vehicles, housing, appliances, and home furnishings were building up. As in past recessions, a restoration of confidence could be expected to lead to an uptrend in consumer purchases, especially durables.

Business capital spending weakened further as cash available from operations was

curtailed and margins of surplus capacity increased. Many projects were postponed, awaiting an improved outlook. The powerful investment incentives provided in the 1981 tax law, especially rapid depreciation and expanded tax credits, will encourage decisions to reactivate these projects. But any major revival of capital spending must await a further decline in real interest rates.

A hard road ahead

The monetary and fiscal authorities are charged with the responsibility for providing an environment conducive to stable growth and reasonably stable prices. Judged by these two criteria, the record of the past two decades has not been favorable. Recessions have been countered by excessively stimulatory monetary policy actions, leading to unsustainable booms followed by new recessions and successively higher levels of unemployment. Meanwhile, government programs to assist individuals and industries have created a vast array of "entitlements" which provide income or special benefits without a commensurate rise in output. Most of these programs are being reevaluated and modified.

Resisting pressures for a "quick fix," the Federal Reserve System has committed itself to a policy of restrained growth in money and credit aggregates. These aggregates have continued to grow, but not at rates that would lead to a revival of inflationary excesses. Such a policy should eventually result in reduced inflation expectations and a gradual decline in interest rates, assuming that some progress is made toward matching government revenues and expenditures. Given a resumption of growth in money turnover, or "velocity," the Federal Reserve's current growth targets should provide adequate funds for gradual economic recovery.

Economic events in 1981— a chronology

Jan 1 Minimum wage rises from \$3.10 to \$3.35. (It remains unchanged on January 1, 1982.)

Jan 1 Social Security wage base rises from \$25,900 to \$29,700, and tax rate rises from 6.13 percent to 6.65 percent. (On January 1, 1982, base rises to \$32,400 and tax rate rises to 6.7 percent.)

Jan 1 Chicago area public transport fares rise by one-third. (Further sharp increases occur in July.)

Jan 9 Bank prime lending rate reduced from 20.5 to 20 percent.

Jan 20 President Reagan inaugurated. He freezes federal hiring.

Jan 20 Iran releases 52 U.S. hostages held 444 days.

Jan 27 Remaining price controls on domestic crude oil and allocation regulations on gasoline lifted.

Jan 29 President Reagan announces 60-day freeze on new regulations.

Jan 29 Federal Reserve begins charging for wire transfers. Fees for other services are phased in over subsequent months.

Feb 2 Chrysler workers agree to forego increases in compensation.

Feb 10 Western coal miners accept 37 percent raise over three years.

Feb 18 Auto makers broaden customer rebates.

Feb 25 Federal Reserve announces money growth targets for 1981.

Feb 27 Federal loan guarantee for Chrysler raised to \$1.2 billion.

Mar 2 Poland orders meat rationing, first time since 1960.

Mar 14 Ford's steel workers agree to cut incentive pay to prevent plant closing.

Mar 15 Two Chicago-area banks closed by examiners.

Mar 22 First class mail goes from 15 to 18 cents. (Rate goes to 20 cents on November 11.)

Mar 26 Treasury Secretary Regan elected chairman of Depository Institutions Deregulation Committee (DIDC). (Volcker elected vice chairman June 25.)

Mar 30 President Reagan and three others wounded in assassination attempt.

Apr 1 Semiannual adjustment in support price of milk is rescinded.

Apr 9 Some exporters reduce posted prices for crude oil.

Apr 10 Ford rejects merger offer from Chrysler.

Apr 14 Space shuttle lands after three-day orbit.

Apr 23 Federal Home Loan Bank Board (FHLBB) gives federal S&Ls broad discretion on variable rate mortgages (VRMs).

Apr 24 Embargo on grain shipments to Russia ended after 16 months.

Apr 24 Prime rate rises from 17 to 17.5 percent.

Apr 27 Dow Jones industrial average closes at 1024, high for the year. (See **Sep 25**.)

May 1 Japan agrees to limit car exports to the United States during the period April 1981 to March 1983.

May 1 Rate on EE bonds rises from 8 to 9 percent.

May 5 Federal Reserve raises discount rate from 13 to 14 percent, and surcharge on frequent, large borrowers from 3 to 4 percent.

May 7 Treasury 30-year bonds yield a record 14 percent.

May 10 Socialist Mitterrand elected French president. (See **Jun 21**.)

May 13 Pope John Paul II is wounded in assassination attempt.

May 19 FSLIC finances merger of troubled Chicago S&L.

May 22 Prime rate rises to 20.5 percent. Investment rate at three-month Treasury bill auction rises to record 17.7 percent.

May 26 OPEC extends price freeze. (See **Oct 29**.)

Jun 3 Prime rate reduced from 20.5 to 20 percent.

Jun 6 Coal miners ratify 40-month contract raising compensation 38 percent, ending 72-day strike.

Jun 8 Israeli jets bomb nuclear reactors in Iraq.

Jun 8 Supreme Court rules women can sue for equal pay on "comparable" jobs.

Jun 11 Farm and construction equipment manufacturers announce extended vacation layoffs.

Jun 21 French Socialists win a solid majority in assembly for five years. (See **May 10**.)

Jun 30 Plan to trade bank CD futures approved by Commodity Futures Trading Commission (CFTC).

Jun 30 Import restrictions on shoes from Taiwan and South Korea allowed to expire.

Jul 1 Social security checks increase by 11.2 percent.

Jul 1 Commonwealth Edison is granted 14.5 percent rate hike.

Jul 2 Supreme Court upholds Montana's severance taxes on coal.

Jul 3 Law signed permitting multibank holding companies in Illinois beginning January 1, 1982.

Jul 6 DuPont offers to purchase Conoco, biggest merger ever.

Jul 6 U.S. dollar hits new highs against European currencies.

Jul 7 Sandra O'Connor is first woman named to Supreme Court.

Jul 8 Prime rate rises from 20 to 20.5 percent.

Jul 8 DIDC adopts schedule for elimination of interest rate ceilings. (See **Jul 31**.)

Jul 9 California debates spraying for Med Fly.

Jul 14 FHLBB allows federal S&Ls to issue graduated payment adjustable mortgage loans.

Jul 15 Midyear budget review projects deficits of \$56 billion for fiscal 1981 and \$43 billion for fiscal 1982. (See **Oct 28**.)

Jul 17 Volcker expresses concern over surge in bank loans to finance mergers.

Jul 21 Federal Reserve announces lower 1982 money growth targets for 1982.

Jul 23 Chairman Pratt of FHLBB says S&L losses are at record pace.

Jul 23 Washington Star announces it will cease publication.

Jul 24 Some Detroit city unions agree to wage freeze.

Jul 31 Schlitz announces permanent closing of its original Milwaukee brewery.

Jul 31 Judge blocks DIDC's plan to lift ceiling on CDs with maturities of four years or more.

Jul 31 Canadian dollar closes at 80.9 U.S. cents, lowest since 1931.

Aug 1 Below-market cap on 2½-year Small Savers Certificates removed.

Aug 3 Phibro Corp. to acquire Salomon Brothers.

Aug 3 Air controllers (PATCO) begin strike. (They are terminated August 5.)

Aug 4 Warsaw populace protests food shortages.

- Aug 5** Ten-year Treasury notes yield a record 15 percent.
- Aug 5** U.S./USSR grain agreement extended one year beyond original expiration date of September 30.
- Aug 13** Economic Recovery Tax Act of 1981 signed into law, cutting personal income tax rates and providing investment incentives. Spending cuts also become law.
- Aug 20** Federal Reserve makes discount window available to thrifts and all banks with severe liquidity problems.
- Aug 24** Six-month Treasury bills auctioned at a record 17.5 percent investment yield.
- Aug 25** Postal workers ratify three-year pact raising wages about 11 percent in first year.
- Sep 1** Indiana Bell's AAA debentures yield record 17.1 percent.
- Sep 1** FNMA conventional commitment yields jump to record 18.7 percent.
- Sep 8** FHLBB approves merger of two failing S&Ls in the East with a California S&L.
- Sep 15** Prime rate declines from 20.5 to 20 percent.
- Sep 16** Federal Reserve reports that industrial production declined in August, start of an extended downturn.
- Sep 17** Teamsters Union agrees to reopen Master Freight Agreement.
- Sep 21** Chicago-area construction equipment operators end two-month strike, winning 14 percent first year wage boost.
- Sep 22** Federal Reserve discount rate surcharge reduced from 4 to 3 percent.
- Sep 24** Ceiling rate on Federal credit union deposits rises to 12 percent effective October 1.
- Sep 25** Illinois law removes usury ceilings on all loans to consumers.
- Sep 25** Dow Jones index closes at 824, low for the year. (See **Apr 27**.)
- Sep 30** FHLBB permits S&Ls to amortize losses on sales of mortgages.
- Oct 1** All Savers Certificates, with tax-exempt yields tied to market rates, become available.
- Oct 1** Federal employees receive 4.8 percent general pay boost, in addition to annual step increases. Military pay rises 14.3 percent.
- Oct 5** Sears Roebuck announces agreement to buy Coldwell Banker. (Sears announces plan to buy Dean Witter Reynolds on October 8.)
- Oct 6** Egyptian president Sadat assassinated.
- Oct 8** Two Chicago-area S&Ls merged by FSLIC.
- Oct 12** Federal Reserve discount rate surcharge lowered from 3 to 2 percent.
- Oct 14** James Tobin wins Nobel Prize in economics.
- Oct 16** President Reagan says a "light" recession is underway.
- Oct 19** DIDC postpones one-half percentage point increase in pass-book savings ceiling previously scheduled for November 1.
- Oct 27** Senate approves AWACS sale to Saudi Arabia.
- Oct 28** Treasury announces fiscal 1981 budget deficit was \$57.9 billion. (See **Jul 15**.)
- Oct 29** OPEC agrees on unified oil base price of \$34 per barrel.
- Nov 1** Ceiling on six-month money market certificates tied to higher of most recent bill auction or four-week average.
- Nov 2** Federal Reserve discount rate reduced to 13 percent.
- Nov 5** Mergers of two large New York mutual savings banks arranged by FDIC.
- Nov 5** Various sales reported of tax benefits by corporations in deficit positions.
- Nov 12** President Reagan announces retention of OMB director David Stockman despite magazine article casting doubt on policies.
- Nov 12** USDA forecasts a record crop harvest, with corn up 22 percent from the drought-reduced outturn in 1980.
- Nov 13** FHLBB reports that commitment rates on conventional mortgages reached a record 18.2 percent in October.
- Nov 16** Flood of corporate issues hits bond market as rates ease.
- Nov 17** Federal Reserve ends discount rate surcharge.
- Nov 18** Housing starts in October reported at 15-year low.
- Nov 23** President Reagan vetoes spending bill as excessive.
- Dec 1** Ceiling-free IRA and Keogh accounts become available. (Eligibility for these accounts is broadened January 1, 1982.)
- Dec 1** Prime rate reduced to 15.75 percent.
- Dec 3** U.S. banks authorized to establish International Banking Facilities.
- Dec 4** Federal Reserve reduces discount rate to 12 percent.
- Dec 4** Jobless rate of 8.4 percent in November was highest since 1975. (It rises further in December.)
- Dec 7** Press reports indicate that administration projects \$109 billion deficit in fiscal 1982, without tax or spending changes.
- Dec 8** McLouth Steel announces filing for bankruptcy after defaulting on loan payment.
- Dec 9** Chicago Mercantile Exchange begins trade in Euro-dollar futures.
- Dec 9** Saudi Arabia says \$34 unified OPEC oil price will continue through 1982.
- Dec 10** Business Council expects recession to end early in 1982, with interest rates lower and inflation reduced.
- Dec 13** Polish government institutes martial law to quell political unrest.
- Dec 14** Treasury bill yields increase sharply, reversing downtrend.
- Dec 14** Mortgage bankers report mortgage delinquencies at record rate.
- Dec 17** President Reagan announces that Department of Energy will be abolished.
- Dec 19** General Motors, following Ford, announces benefit cuts for salaried workers.
- Dec 21** UAW bargaining councils agree to discuss concessions on contracts with Ford and GM.
- Dec 22** President Reagan signs hotly debated four-year farm bill.
- Dec 22** Administration plans to nominate Preston Martin as vice chairman of Federal Reserve Board.
- Dec 23** International Harvester announces agreement on restructuring \$4.2 billion debt.
- Dec 23** President Reagan announces economic sanctions against Poland's government to protest imposition of martial law.
- Dec 24** Many durable goods producers will extend holiday shutdowns into January.
- Dec 31** Purchasing managers report that orders, output, and employment continued to decline in December.
- Dec 29** President Reagan announces sanctions against Russia for its role in Polish crisis.

Lagged reserve accounting and the Fed's new operating procedure

Robert D. Laurent

Adoption of the Fed's new reserves-oriented operating procedure on October 6, 1979, was greeted with praise by both admirers and critics of the Federal Reserve System. Especially encouraged were those who, for many years, had urged the Fed to abandon its interest rate operating procedure in favor of a reserves targeting procedure. These critics viewed the proposed new procedure as a major step in the right direction, even as they withheld final judgment until they saw how the new procedure was implemented.

There was a broad consensus, both within the Fed and elsewhere, that adoption of the new procedure would result in better short-run control of money at the expense of greater volatility in short-term interest rates. The expected increase in interest rate volatility was observed in 1980 and 1981. However, the effects of the new procedure on money stock growth were partly obscured by special influences during the early part of 1980, including the credit restraint program introduced in March, sharp increases in oil prices, and—for a short time during the spring—concern by policymakers over the consequences of sharply falling interest rates for the international value of the dollar.

Many special circumstances disturbed the "normal" operation of the money and capital markets in 1981. Most notable among these were the anticipation of record federal budget deficits and the redirection of government priorities and spending programs. These nonrecurring events make it especially difficult to separate the effects of the Fed's new operating procedure from the effects of other forces.

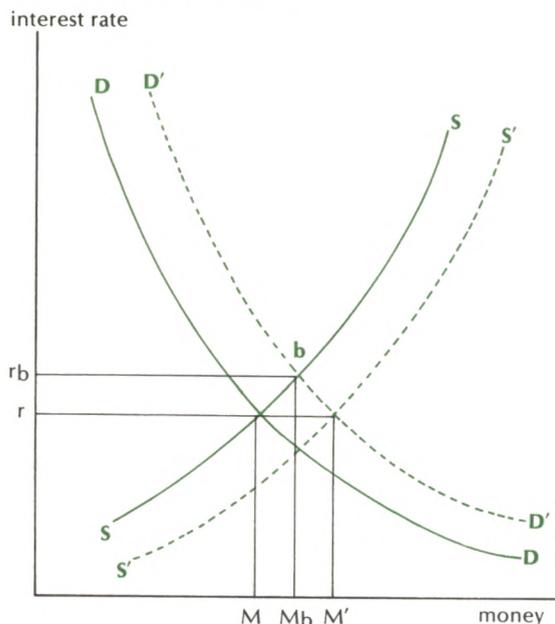
The likely effects of the new operating procedure on interest rates and money are examined in this article within an analytical

framework that differs considerably from those used in most other studies. Rather than focusing on the longer-run demand for money as the major determinant of money creation, this framework emphasizes the effects of short-run developments in the reserves and credit markets on the behavior of banks as suppliers of credit. In contrast to the usual textbook treatment of the money supply process as a mechanistic response by banks to their basic reserve positions, the article focuses on the key role of the federal funds rate. Drawing on these elements, the article then describes the implications for the new operating procedure of the lagged reserve accounting system that is now in effect. Finally, a number of conclusions are drawn about the behavior of interest rates and money under the new procedure that appear to be consistent with the observed data.

Money demand

The broad consensus regarding the effects of the new operating procedure rested on the prevailing theory of money stock determination. This theory assigns a very important role to the demand for money, the relationship between the quantity of money the public desires to hold and the level of interest rates, economic activity, and other variables. The curve DD shows the relationship between the quantity of money demanded and interest rates at a given level of economic activity. The quantity of money demanded increases as interest rates fall because the cost of holding money (in the sense of the interest foregone) falls. If the level of economic activity were to rise, more money would be demanded at every level of the interest rate, as indicated by the curve D'D'.

The prevailing model of money stock determination



According to the prevailing theory, the money stock is determined by the intersection of the money demand curve and the money supply curve. The curve SS represents a money supply curve. It shows how the quantity of money that will be produced out of a given level of reserves varies with the interest rate. The reason why the quantity of money increases with interest rates is that higher interest rates make it profitable for banks to manage their liquidity positions more closely, reducing their holdings of excess reserves and producing a greater quantity of money out of any given quantity of reserves. By changing the level of reserves supplied, the Fed can shift the money supply curve, so that $S'S'$ could represent the money supply curve at an increased level of reserves.

According to the prevailing view, the old operating procedure of concentrating on interest rates required that the Fed determine which interest rate on the demand for money schedule was consistent with the desired money stock. This proved to be a difficult task. More importantly, the interest rate tar-

geting procedure transformed unexpected shifts in the money demand function into disturbances to the money stock. To see this, consider a shift in the money demand curve from DD to $D'D'$. In order to maintain the target interest rate r , the monetary authority must increase reserves until the money supply curve has shifted to $S'S'$, thus reestablishing the target interest rate. But the money stock has clearly increased from M to M' . Given the pattern of shifts in the demand for money, the old operating procedure bought interest rate stability at the cost of increased volatility in money.¹

Like the old procedure, the new operating procedure focuses on the demand for money as the basic determinant of the level of the money stock. It requires the Fed to choose a target level of reserves which, given the expected demand for money, will produce the desired money stock. However, when a shift occurs in the demand for money, there is a definite advantage to the new procedure. Suppose that the demand for money shifts, as described previously, from DD to $D'D'$. Under the new operating procedure, the Fed leaves reserves unchanged, and the new equilibrium point is b . Interest rates rise to r_b and money to M_b . Evaluated in terms of the prevailing theory of money stock determination, the new operating procedure should reduce the volatility of money and increase that of interest rates.

The supply approach

As indicated above, the demand for money and shifts in the demand for money play a key role in the prevailing theory of money stock determination. This seems natural, inasmuch as economists usually think of quantities being determined jointly by supply

¹There could also be shifts in the supply of money function (e.g., in the relationship between excess reserves and interest rates), in which case an interest rate stabilization policy would reduce the volatility in money. The adoption of the new operating procedure assumes, and empirical evidence (e.g., the low level of excess reserves) suggests, that non-policy shifts in supply are smaller than shifts in the demand for money.

and demand. There is, however, an alternative way of looking at money stock determination that focuses on the supply of money and completely ignores the demand for money. In effect, this alternative approach rests on the assumption that the public will hold whatever quantity of money the Fed and the banking system combine to supply.

This alternative approach depends critically on the unique property of money as a means of performing transactions. Because of this unique function of money, certain monetary transactions must be interpreted carefully. For example, suppose that the Fed purchases securities from bond dealers with newly created money. The dealers' acceptance of money in exchange for the bonds in no way implies that they now wish to hold permanently higher checking balances. Indeed, it is highly unlikely that this is the case. It is more reasonable to assume that, because the Fed has offered a good price for the securities, the dealers have exchanged them for money as a prelude to buying other assets.

But while the dealers can easily eliminate that part of their increased money balances in excess of the amount they want to hold by buying other assets, that newly created money does not disappear. For the economy as a whole there is no reduction in money, but simply a redistribution. Similarly, when a bank creates new money by making a loan or buying securities, there is no presumption that the borrower or the seller of securities desires a permanent increase in his money balances. Again, however, when the money is used to purchase other assets it does not disappear, but simply becomes a temporary excess money balance held by another party.

This exclusive emphasis on the supply side in determining the stock of money may seem strange at first to economists. They are taught at an early stage in their training not to neglect either supply or demand in determining the quantity of a good or service actually produced and sold. The supply approach described here does not really violate the traditional approach, but may be considered a polar case of it. The essence of the supply

approach is that, because of money's unique quality as a means of transfer, the public's willingness to accept money in exchange for goods or services is virtually unlimited in the short run. In the long run, the demand for money is the mechanism by which the economy as a whole adjusts to the quantity of money supplied by the Fed and depository institutions.

There are some clues that an exclusive concentration on the supply side might be a valid approach to money stock determination. In the wake of the Great Depression of the 1930s, many economists advocated a system of 100 percent reserve requirements on demand deposits to prevent undesired changes in the money stock. While there may be problems with these proposals, it is widely conceded that they would give accurate control over money. Yet, the proposals never mentioned the demand for money. Rather, by eliminating excess reserves, such proposals would have made the supply curve of money perfectly vertical at any given level of reserves. Under these conditions, for money as for any other good, demand would affect only price; it would play no role in determining quantity. In this way the proposals for 100 percent reserve requirements would have translated the Fed's control over reserves directly into control over money.

A second clue to the validity of the supply approach to money stock determination is the widely acknowledged fact that the full response of the economy to a change in money occurs only with a considerable lag. This suggests that the public does not—indeed, cannot—immediately adjust its money balances to their long-run equilibrium levels. Rather, in the short run, the public passively accepts whatever level of money is supplied. Although individuals can adjust their holdings quickly, their actions in doing so simply displace other economic units from equilibrium. It is only through the repeated efforts of a long succession of individuals to adjust that a change in money has its impact on the economy. While the public cannot change the aggregate quantity of money, it

can eventually reach long-run equilibrium by inducing changes in economic activity (and/or prices) to the point where it is satisfied to hold whatever nominal quantity of money has been supplied.

The time interval between a change in the money stock and completion of the economic changes which make that money stock acceptable is what is usually referred to as the impact lag of monetary policy. For example, if the money stock is increased, holders will initially attempt to purchase other assets, both financial assets and existing and newly produced real assets. This will stimulate economic activity (and/or raise prices) until all of the increased money stock is demanded because of the higher volume of monetary transactions. Conversely, a decrease in the money stock will induce a fall in economic activity (and/or prices) until the reduced money stock is just adequate to handle the lower volume of monetary transactions.

The money supply process

The money supply process is the process by which the Fed induces banks to buy or sell assets, thereby creating or destroying deposits and changing the money stock. Textbooks generally describe the money supply process as a mechanistic response by banks to changes in their reserve positions. In this textbook scenario, a bank changes its asset holdings in response to the relationship between reserves and required reserves. If reserves exceed required reserves, the bank eliminates its excess reserves by buying an equal amount of assets, thereby creating deposits and increasing the money stock. Conversely, if a bank's reserves are less than its required reserves, then the bank eliminates its deficiency by selling an equal amount of assets, initially destroying deposits in the banking system (since in all likelihood the purchaser will pay for the asset with a deposit) and reducing the money stock. The process is pictured as continuing at each individual bank until aggregate required reserves equal aggregate reserves.

However useful the textbook scenario

may be as a pedagogical device for demonstrating how the banking system translates a change in reserves into a multiple change in money, it is not an accurate description of how banks behave. It is important to understand that banks respond primarily to the price of reserves, specifically the federal funds rate, in deciding whether to buy or sell assets, and thereby to create or destroy deposits.

A bank is a profit-maximizing intermediary that views the federal funds market as a potential source or outlet for funds. The bank neither knows nor cares about the aggregate level of reserves in the banking system and cares but little about its own preexisting level of reserves. Of course, it must have enough reserves to meet its required reserves, but it can always purchase or dispose of reserves in the federal funds market. If the spread between the rate of return on an asset and the federal funds rate is sufficiently wide, even a bank deficient in reserves will purchase the asset, creating deposits in the process, and cover the added reserve loss by purchasing even more reserves than otherwise in the federal funds market.

That bank asset adjustment decisions are affected by the price of reserves (federal funds rate), and not by preexisting reserve positions, is clearly demonstrated by the fact that many large banks consistently purchase more reserves in the federal funds market than their entire level of required reserves. Without the federal funds purchases, these banks would not only be deficient, but would actually have negative reserve levels. If banks responded solely to their basic reserve positions, these banks would long ago have sold assets to cover their basic reserve deficiencies.

The effect of the federal funds rate on the money stock is clear. Other things being equal, the higher the federal funds rate, the lower the money stock. A higher federal funds rate, in relation to the rates on other assets; makes it more attractive for banks to sell other assets and channel the reserves thereby obtained into the federal funds market, reducing deposits and the money stock. A lower federal funds rate makes it more

attractive to borrow reserves in the federal funds market and use them to purchase other assets, thereby increasing deposits and the money stock.

The basic relationship between the federal funds rate, the rate on bank assets, and the money stock is not dependent on the particular operating procedure or reserve accounting system that the Fed is using. However, the operating procedure and reserve accounting system do affect the manner in which the federal funds rate is determined and, consequently, the Fed's ability to control the money stock.

Interest rate targeting

An interest rate targeting procedure such as that followed by the Fed before October 6, 1979, is easily described within the supply approach to money stock determination. The first task of the Fed was to choose a federal funds rate which it believed would induce banks to hold a quantity of assets just consistent with the desired level of the money stock. Then, the Federal Open Market Desk (Desk) varied nonborrowed reserves through sales and purchases of securities in such a way as to keep the federal funds rate within a narrow range about this chosen level. The Desk was able to do this quite well.

But it proved to be extremely difficult to determine what interest rate was consistent with the desired money stock. That difficulty, together with an apparent reluctance to move the federal funds rate sufficiently to bring money quickly back to the target path following unanticipated deviations sometimes led to large cumulative departures from the announced ranges for as long as a quarter or more. Dissatisfaction with the results of the interest rate operating procedure ultimately led to the October 6, 1979 shift to the new operating procedure.

Reserves targeting

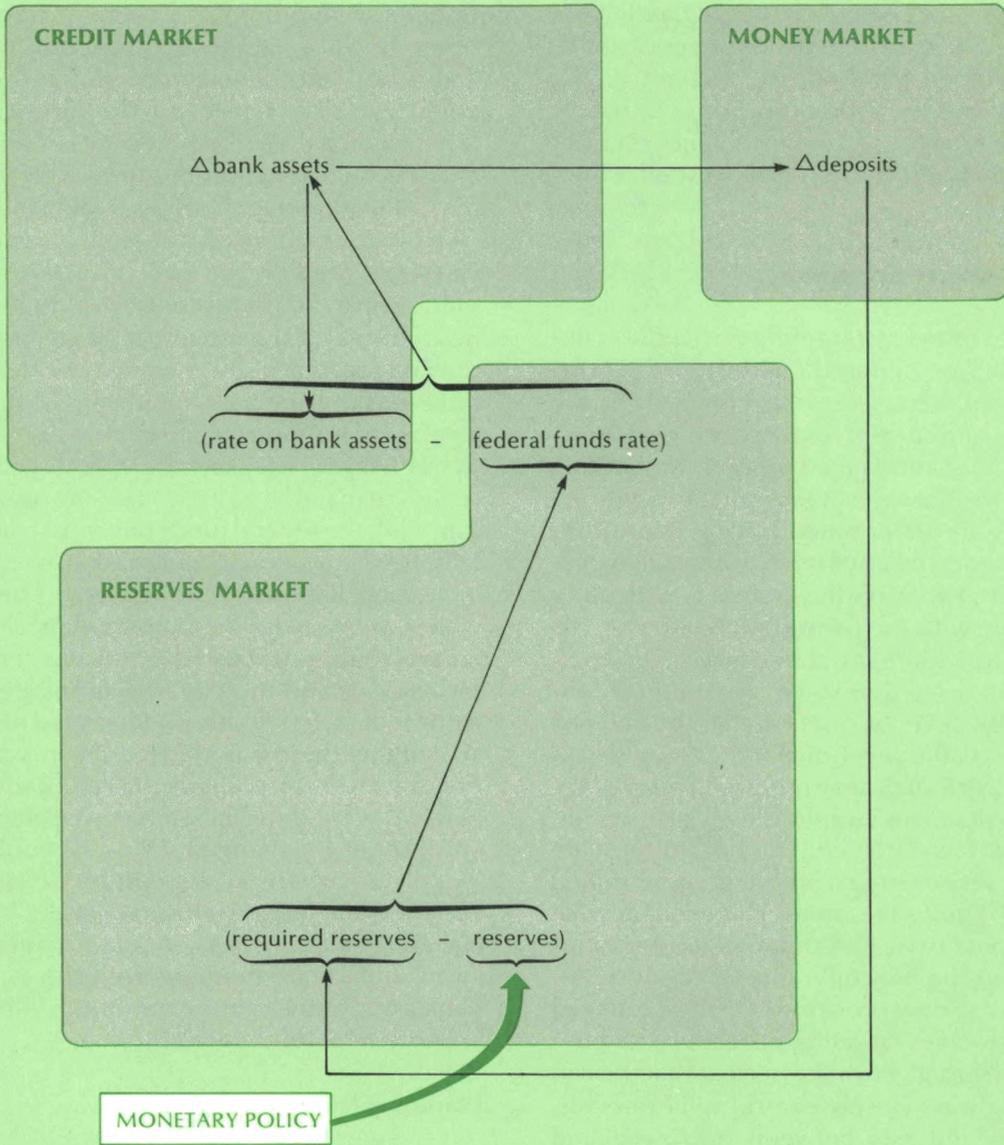
For many years academic economists and others have urged the Fed to adopt a reserves

targeting procedure for controlling the money stock. Before discussing the major features of the operating procedure adopted on October 6, 1979, it may be useful to describe the operation of a hypothetical reserves targeting procedure from the vantage point of the supply approach to money stock determination. Crucial to understanding such a procedure is the assertion made earlier that banks respond to the federal funds rate, rather than to their basic reserve positions, in changing deposits. This is not to say that the level of reserves is unimportant. Indeed, because reserves and the federal funds rate are interdependent, it makes no sense to say that one is important, while the other is not. But since the precise relationship between the federal funds rate and deposits may be difficult to ascertain, it may make sense to use reserves to guide the federal funds rate to the proper level to produce the target money stock.

Advocates of reserves targeting are asking that the money stock be allowed to adjust to a predetermined level of reserves. As discussed above, individual banks would be guided in making this adjustment by movements in the federal funds rate. However, it is precisely the difficulty of knowing the appropriate federal funds rate that argues for a self-equilibrating mechanism to set the rate and achieve the money target. Under a reserves targeting procedure, the role of the Fed is confined to providing a level of reserves believed consistent with the desired money stock, given the level and structure of reserve requirements. The reserves market is then supposed to guide the federal funds rate to whatever level is required to obtain the desired level of deposits, as illustrated in the accompanying schematic diagram.

Suppose, for example, that required reserves are greater than the level of reserves (presumably meaning that the actual money stock exceeds the targeted level). The shortage of reserves causes banks to bid up the federal funds rate. As the federal funds rate rises, banks respond by selling assets—thereby destroying deposits and reducing the

Reserves targeting procedure



money stock—and channeling the funds into the federal funds market. The federal funds rate will continue to rise until banks have sold enough assets, thereby raising other interest rates, and destroyed enough deposits to reduce required reserves below the level of

reserves provided. Conversely, if required reserves are below the level of reserves provided, the federal funds rate will fall and banks will buy assets, lowering other rates and increasing deposits (and money), until required reserves move up into equilibrium

with reserves.

In a system in which *current* deposits affect *current* required reserves, the purchase (sale) of assets can raise (lower) required reserves by increasing (decreasing) deposits. This does not change the aggregate level of reserves, of course, but simply redistributes them. Indeed, the essential characteristic of a total reserves targeting procedure is that the federal funds rate, deposits, and required reserves all adjust to a preestablished level of reserves.

Lagged reserve accounting

The reserves targeting procedure described above depends critically on the existence of a direct relationship between current deposits and current required reserves. However, under the lagged reserve accounting system in use since 1968, current required reserves are determined not by deposits in the current week but by deposits two weeks earlier. In two ways this system is difficult to reconcile with the hypothetical reserves targeting procedure described above.

First, lagged reserve accounting constrains the level of reserves that the Fed can provide. If the level of deposits two weeks before were such that required reserves are greater than the targeted level of reserves, the Fed has little choice but to provide enough reserves to cover the predetermined level of required reserves. This explains what may appear to be a common misunderstanding about the new operating procedure. Although the new procedure is often referred to as a reserves targeting procedure, the description just given makes it clear that the Fed cannot always closely control total reserves, but only the mix between borrowed and nonborrowed reserves.² The fact that the Fed

²That is, although the Fed must provide at least enough reserves to cover the level of required reserves, it has a choice of how to provide the reserves. The greater the amount of reserves provided through open market operations (nonborrowed reserves), the smaller the amount of reserves that banks must borrow through the discount window, and therefore the lower the federal funds rate.

targets nonborrowed reserves would seem to be implicit recognition that there are times when hitting a targeted level of total reserves is not feasible.

The second problem posed by lagged reserve accounting for a reserves targeting procedure is always present, even when the Fed is not constrained from hitting the targeted level of total reserves. Consider a situation in which the level of deposits two weeks ago was below the desired level. This means that the quantity of reserves demanded—which reflects primarily the level of required reserves—is below the level of total reserves that would be consistent with the Fed's desired level of the money stock. In this case, the Fed could achieve the necessary level of total reserves simply by supplying a sufficient amount of nonborrowed reserves.

However, because the quantity of reserves demanded is less than the quantity supplied, the federal funds rate must fall. As it falls, banks respond by purchasing assets and increasing deposits. But, unlike a system in which an increase in current deposits increases required reserves, raising the demand for reserves and thereby halting the decline in the federal funds rate, under lagged reserve accounting there is nothing in the increasing deposit levels to cushion the fall. Required reserves were determined two weeks earlier and cannot be changed. Deposits could go literally anywhere in the current week and not affect the federal funds rate at all.³ Under lagged reserves, banks continue to purchase assets and create deposits until the rate on bank assets moves into equilibrium with the lower federal funds rate.

Market volatility

Lagged reserve accounting has profound implications for the new operating procedure.

³Changes in deposits in the current week do not affect the demand for reserves in the current week, which was determined by the deposit level two weeks earlier. Even though changes in deposits in the current week will affect the demand for reserves two weeks from now, there is no way that this will influence the demand or supply of reserves in the current week.

ture. It was noted earlier that, according to the prevailing view of money stock determination, the new operating procedure was expected to stabilize short-run changes in money at the expense of increased short-run volatility in interest rates. But under lagged reserve accounting, the supply approach to money stock determination suggests a different result.

According to the supply approach, changes in deposits occur because of changes in the spread between the rate banks can earn on assets and the rate charged for reserves (federal funds rate). Deposits will change if, and only if, banks have an incentive to exchange assets with the public. The key to understanding the effects of the change in operating procedure on the volatility of interest rates and money lies in examining the implications of different reserve accounting schemes as well as different operating procedures for the process by which the rate spread is returned to equilibrium.

Consider an example using the supply approach to money stock determination. Assume that the banking system is in equilibrium when the rate that banks can earn on assets increases. According to the supply approach to money stock determination, such an increase may arise not only from an increase in the demand for money, but from any change in the credit market which raises interest rates. The initial response to the increase in the rate on bank assets is that banks will attempt to buy assets and thereby increase deposits.⁴ The final result depends on the reserve accounting system as well as the operating procedure.

Reserves targeting. Consider the case in which deposits in the current week determine current required reserves and the Fed is targeting total reserves—i.e., the situation usually assumed when speaking of a reserves targeting procedure. In this situation, as soon as banks attempt to buy assets and increase the money supply, required reserves increase and the shortage of reserves causes the federal funds rate to rise. It continues to rise until there is no longer any incentive for banks to increase their asset holdings. That is, the federal funds rate increases until it has returned the gap between it and the rate on bank assets to an equilibrium level.

In the end, interest rates have risen and the money stock has increased only to the extent that the higher interest rates have led banks to reduce excess reserves. In this situation, according to both the prevailing view and the supply approach, more volatile interest rates are associated with less volatile short-run changes in money.

The old operating procedure. Now consider a second situation, in which lagged reserve accounting is being used, but the Fed is targeting an interest rate—i.e., the old operating procedure. Again, assume that the rate on bank assets rises. Banks again buy assets, increasing deposits and money. But because current required reserves were determined by deposits two weeks earlier, the change in deposits has no effect on the demand for reserves and no impact on the federal funds rate. The only way that a change in the federal funds rate can occur would be if the Fed decided to make it occur. The schematic diagram of the old operating procedure

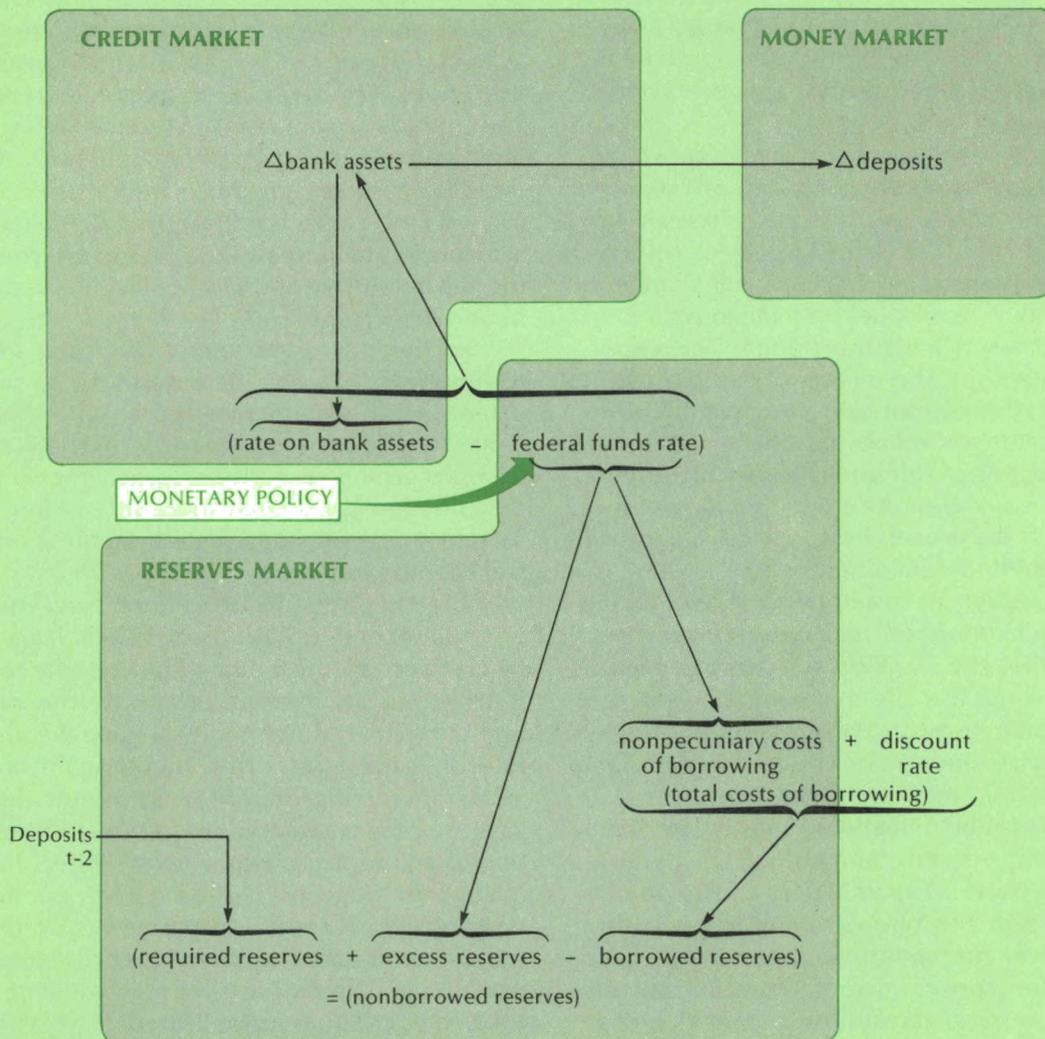
⁴The supply approach assumes the following bank response mechanism:

$$\Delta \text{ Deposits} \approx \Delta \text{ Bank Assets} = f(\text{Rate}_{\text{bank assets}} - \text{Expected Rate}_{\text{federal funds}})$$

This response mechanism says that banks exchange assets with the public on the basis of the difference between the rate on bank assets and the expected rate on federal funds of the same maturity. If the rate on bank assets is above the expected rate on federal funds of the same maturity, banks will purchase assets (loans or securities) from the public, thereby creating deposits, and cover the

reserve loss with purchases in the federal funds market. Conversely, if the rate on bank assets is below the expected rate on federal funds of the same maturity, banks will reduce their asset holdings obtained from the public, thereby reducing deposits, and sell the funds obtained in the federal funds market. Policy affects the money stock through the impact of the current federal funds rate on expected federal funds rates in the future. The greater is the impact of a movement in the current federal funds rate on expected future federal funds rates, the greater is the impact on money.

The old operating procedure



procedure shows that the Fed directly sets the federal funds rate and that the connection between deposit changes and required reserves in the current week is severed by lagged reserves. Since, under an interest rate targeting procedure, the Fed is only moving the

federal funds rate by small increments, the disturbances to the spread between the rate on bank assets and the federal funds rate from movements in the federal funds rate are small. Under a lagged reserve system there is no mechanism that automatically matches

movements in the federal funds rate to movements in the bank asset rate. The disturbances to the spread are thus the sum of two independent interest rate movements—the movement in the bank asset rate arising from shifts in the credit market and the small movements in the federal funds rate produced by the Fed. In the example being considered, banks achieve equilibrium by purchasing assets and increasing deposits until the rate on bank assets has been lowered to its previous level and the equilibrium spread has been reestablished. In the short run money increases but interest rates are unchanged.

Notice that even if the reserve accounting system had been one in which current deposits determined required reserves, the results would have been the same as long as the Fed operates through interest rates. This result is consistent with the widely acknowledged fact that the reserve accounting system is irrelevant if the Fed is targeting an interest rate.

The new operating procedure. Finally, consider a situation in which the reserve accounting system is again lagged reserves, but the Fed is targeting a level of nonborrowed reserves—i.e., the new operating procedure. Again, under lagged reserve accounting, banks reach equilibrium by changing their asset holdings (and the money stock) until the interest rate on bank assets moves into equilibrium with the federal funds rate. The new operating procedure does not differ from the old procedure in this respect. The

main difference between the new procedure and the old one is that the Fed no longer stabilizes the federal funds rate in the short run. Consequently, short-run movements in the federal funds rate are much more volatile.

Although this increased volatility of the federal funds rate was anticipated when the new procedure was adopted, it was viewed as the necessary cost of improved control of the monetary aggregates. However, another important consequence of the new procedure seems not to have been fully appreciated. This is the fact that the short-run changes in bank assets and deposits necessary to equilibrate the bank asset rate to this more volatile federal funds rate will generally be larger than under the old procedure.

The key to understanding this seemingly implausible result is to keep in mind that federal funds rate volatility is beneficial in stabilizing short-run movements in money only if it serves to reestablish equilibrium between the rate on bank assets and the federal funds rate, as it would under a reserves targeting procedure in which current deposits determine current required reserves. Greatly increased federal funds rate volatility that is unrelated to the rate in the credit market—which, as was discussed previously, is characteristic of a lagged reserve accounting system—will serve to widen the departure from equilibrium more often than to narrow it.

The dramatic increase in the volatility of the federal funds rate under the new operating procedure makes the departure from

Weekly interest rate and deposit volatility

Period	Federal funds rate		Demand deposits			
	Average absolute deviation	Standard deviation	Nonseasonally adjusted		Seasonally adjusted	
			Average absolute deviation	Standard deviation	Average absolute deviation	Standard deviation
Oct. 20, 1976 - Oct. 10, 1979	1.375	1.810	.799	1.028	.574	.756
Oct. 20, 1976 - Oct. 12, 1977	1.668	2.153	.805	1.004	.588	.735
Oct. 19, 1977 - Oct. 11, 1978	1.136	1.423	.756	.932	.579	.778
Oct. 18, 1978 - Oct. 10, 1979	1.320	1.813	.837	1.151	.557	.750
Oct. 17, 1979 - Oct. 8, 1980	5.700	7.326	1.110	1.384	.651	.820
Oct. 17, 1980 - Oct. 7, 1981	4.020	5.183	.992	1.271	.651	.846
Oct. 17, 1979 - Oct. 7, 1981	4.860	6.315	1.016	1.333	.663	.845

All data use weekly percentage changes. Measures of volatility are the average absolute deviation about the mean and the standard deviation. Seasonally adjusted demand deposits are adjusted by taking the difference between the current figure and the figure 52 weeks earlier.

equilibrium much larger, on average, than under the old procedure. The further the two rates are from an equilibrium relationship to one another, the larger are the changes in deposits required to achieve equilibrium. Thus, the new operating procedure yields not only increased volatility in interest rates—which was generally expected when the new procedure was adopted—but also somewhat increased week-to-week volatility of deposits. That the volatility of both the federal funds rate and deposits has increased since adoption of the new operating procedure is shown in the table. However, as will be noted later, this increased week-to-week volatility in deposits could well be accompanied by a reduced volatility in deposits over longer periods of time.

The change in procedure

It is a truism of economics that the federal funds rate, like any other price, is determined by the interaction of supply and demand. Yet, there are important differences under different operating procedures in how supply and demand interact to determine this basic link in the money supply process. The usual conception of a reserves targeting procedure implicitly assumes that the supply of reserves is set first and that the federal funds rate responds to shifts in the demand for reserves through the impact of current deposit changes on required reserves.

Under lagged reserve accounting, however, it is impossible for deposit changes in the current week to affect the federal funds rate, because required reserves were determined by deposit levels two weeks earlier. With the demand for reserves in the current reserve maintenance week essentially fixed, the federal funds rate and deposits respond only to changes in the supply of reserves. The structure of the present reserve accounting system prevents the federal funds rate from performing the role that it should in a reserves targeting procedure. The effect of the shift to the new operating procedure is to change the way the supply of reserves deter-

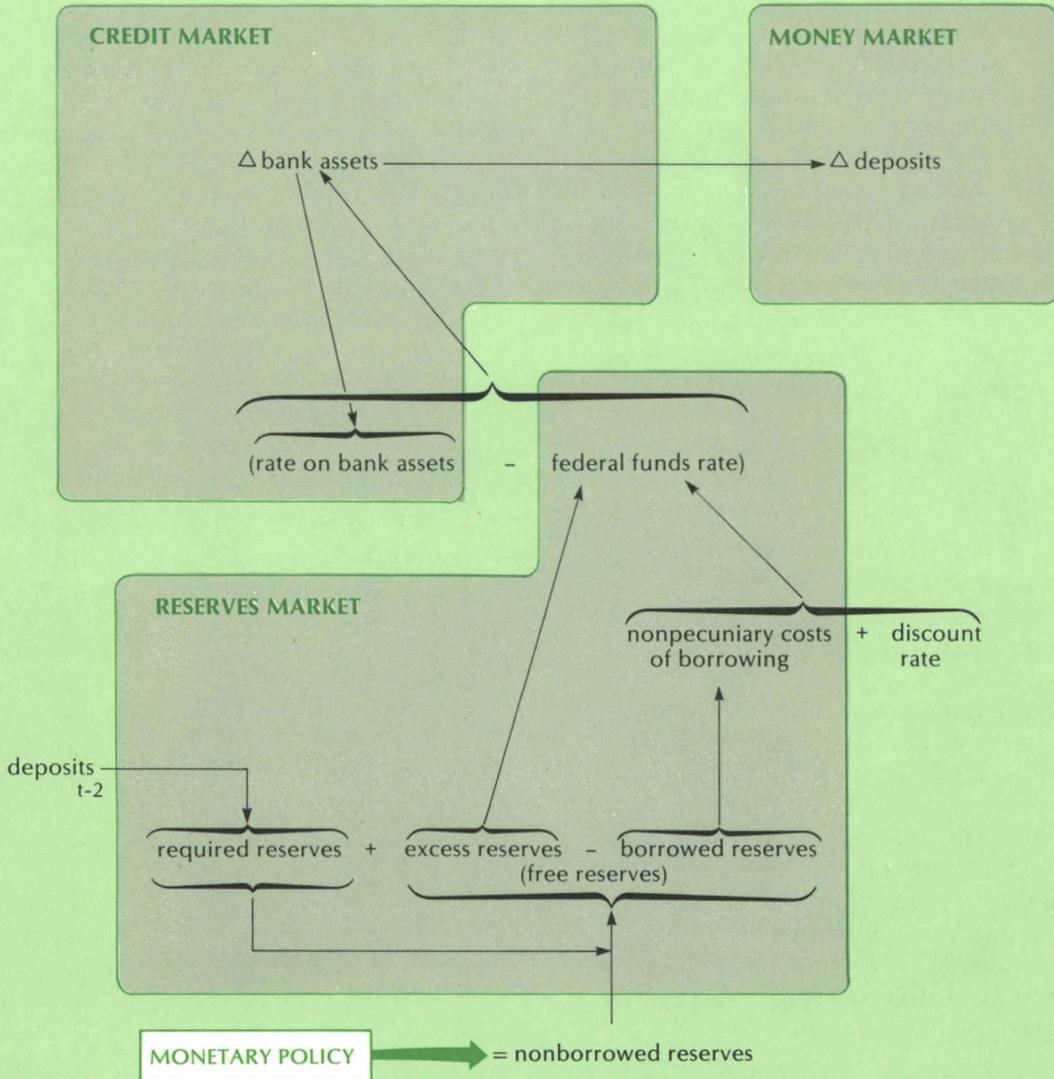
mines the federal funds rate.

Under the old operating procedure, it was clear how the Fed used the supply of reserves to determine the federal funds rate. Having chosen a target level of the federal funds rate, and with required reserves set two weeks earlier, the Desk varied the level of nonborrowed reserves to achieve that target. Under those conditions the Fed knew the federal funds rate it was producing, and the levels of borrowed and nonborrowed reserves fell out as a consequence of the discount rate and the operation of the discount window, as shown in the schematic diagram of the old operating procedure.

Under the new operating procedure, the Fed begins implementing policy by providing some level of nonborrowed reserves. As before, given the discount rate and the manner in which the discount window is administered (i.e., the nonpecuniary costs of borrowing), the level of nonborrowed reserves determines the federal funds rate. But under the new operating procedure the Fed does not know precisely the level of the federal funds rate that will result from the level of nonborrowed reserves provided. As shown in the schematic diagram of the new operating procedure, the supply of nonborrowed reserves still determines the federal funds rate, but at one step removed. And that determination has become much more complex because the federal funds rate associated with a particular level of nonborrowed reserves now depends on the discount rate and the nonpecuniary costs of borrowing at the discount window.

The preceding analysis explains why the increased short-run volatility in the federal funds rate that accompanied adoption of the new operating procedure has resulted in increased short-run (weekly) deposit volatility. However, the adoption of the new operating procedure could well bring an improvement in monetary control. The major criticism of the old operating procedure was not that short-run (weekly) deposit volatility was too large, but that the monetary authority was reluctant to move the federal funds rate

The new operating procedure



enough to prevent longer-run deviations of money stock growth from target. If the new operating procedure allows the federal funds

rate to move more in response to deviations of money stock from target, then it is likely to improve longer-run monetary control.

The effects of usury ceilings

Donna Vandenbrink

Regulations designed to prevent usury, or the taking of “excessive” interest, have been debated from the time of Moses. Today, as a result of a prolonged period of high inflation, record interest rates, and sluggish economic growth, the usury ceilings in effect in many states are the center of controversy. Are the critics of these usury ceilings simply speaking out of self-interest when they argue that interest rate ceilings work to consumers’ disadvantage by restricting credit flows and distorting financial markets? Do usury ceilings protect consumers from abusive lending practices and enable them to obtain loans at reasonable rates, as their advocates claim?

Recent legislation, at both the federal and state levels, has been in the direction of relaxing interest rate controls. The 1980 Depository Institutions Deregulation and Monetary Control Act overrode state interest ceilings on some categories of loans, and additional federal action may be forthcoming. At the same time, many state legislatures have revised their usury statutes. In large part, these recent changes in usury regulation have been in response to the current economic situation. But is deregulation of usury ceilings desirable? And if it is desirable, should it be left to the states or is it best accomplished by federal preemption? This article surveys the economic research on usury ceilings in order to help answer these questions.

Usury ceilings in a competitive market: the theoretical arguments

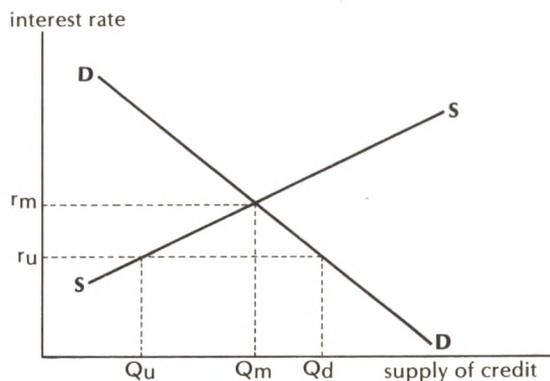
In economic theory, the credit market is viewed like any other market.¹ There are buyers (borrowers) and sellers (lenders) of

¹For a simple theoretical treatment of usury ceilings see Chapter 9 in James Van Horne [25]. For a more advanced discussion see Rudolph C. Blitz and Millard F. Long [2].

credit; the price of credit is the interest rate. The credit market is easily represented in a conventional supply and demand diagram (see figure). The demand curve indicates the amount of credit borrowers are willing to purchase at various prices (interest rates). The supply curve indicates how lenders’ marginal cost of funds varies with the amount of credit supplied and, thus, the amount of credit they are willing to grant at various interest rates, assuming the market is competitive. According to theory, borrowers and lenders will eventually establish an equilibrium in the market at a price which just balances the supply and demand for credit. We can call this price the market rate of interest. Such a rate is shown as r_m .

Usury laws stipulate a maximum rate of interest which lenders may legally charge. When a usury law is introduced, it may alter the way in which both price and quantity are determined in the credit market. Exactly what happens depends on the level of the usury ceiling relative to the market rate. When the legal ceiling is above the market rate of interest (r_m), the law has no effect at all. The

The effects of a binding usury ceiling



market forces of supply and demand are unconstrained by the usury ceiling, and the equilibrium price and quantity of credit are unchanged. However, when the legal ceiling is below r_m , the regulation does affect the market outcome. Such a usury ceiling, like the rate r_u in the figure, is said to be binding or effective.² A binding ceiling obviously alters the price of credit—the ceiling rate becomes the rate of interest charged. Therefore, if the market rate r_m were considered too high, a usury ceiling of r_u would lower the rate of interest for those borrowers who were able to obtain credit.

However, establishing a lower-than-market interest rate by means of a usury ceiling will also bring about a decrease in the quantity of credit supplied. Given lenders' costs (as reflected in the supply curve shown in the figure), the most credit which they will provide when the interest rate is held down to r_u is Q_u . Therefore, the binding usury ceiling will lead to a reduction from Q_m to Q_u in the amount of credit supplied. Furthermore, in contrast to the situation in the unregulated market, this amount of credit will not satisfy all those who are willing to borrow at the ceiling price. The usury ceiling creates a situation of excess demand with borrowers seeking an amount of credit, Q_d , that exceeds the amount supplied by lenders, Q_u . Borrowers are prevented by the ceiling from bidding to obtain more credit and lenders will not provide any more credit at the legal maximum interest rate. Thus, at the legal ceiling price the reduced amount of credit must be rationed among borrowers by some means other than price.

The important implication of this straightforward supply-demand analysis is that usury laws can succeed in holding interest rates below their market levels only at the expense of reducing the supply of credit to borrowers.

²What has happened in many states over the last decade is that for various economic reasons market interest rates have risen above what were initially non-binding statutory ceilings. While the ceilings always existed, only recently have they begun to impinge on the market.

The effect of usury ceilings on the quantity of credit supplied: the evidence

Potential borrowers would surely find it less than desirable if binding interest rate ceilings did have the predicted effect on the supply of credit. In order to test this predicted relationship and to measure its importance, investigators have examined a number of different credit markets.

Because commercial loans are usually exempt from state usury ceilings, there have not been many studies of the effects of usury ceilings on commercial lending. In one of the few such studies, Robert Keleher of the Federal Reserve Bank of Atlanta [9] determined that banks in Tennessee extended fewer commercial loans the further market interest rates rose above the state's 10 percent usury ceiling.³

More widely studied has been the mortgage market, where binding usury ceilings also have been found to have very restrictive effects on credit supplies. The Federal Reserve Bank of Minneapolis [3, 20] analyzed Minnesota's experience with an 8 percent usury ceiling on conventional home mortgages. In this case, the usury ceiling had a significant impact on the composition of mortgage credit even though the total volume of mortgage lending apparently was unaffected. The Minneapolis study found that when market rates climbed to between 9 and 10 percent in 1973-74, home financing in Minnesota shifted substantially from conventional mortgages that were subject to the ceiling to FHA or VA loans that were exempt from the ceiling. About 40 percent of all new mortgage loans issued in the state in late 1974 were FHA-insured, almost double the usual share, and conventional mortgages were virtually unavailable in the Twin Cities.

More formal analyses of the effect of

³The exceptions were loans to nondurable and durable manufacturing and loans to service industries. Keleher speculates that these loans were not adversely affected by the ceiling because of previous commitments, strong customer relationships, and nonprice rationing.

usury ceilings on the supply of mortgage credit were carried out by James Ostay [16], Philip Robins [19], and James McNulty [12]. Ostay and Robins approached the issue indirectly, looking at the impact of ceilings on home building rather than on mortgage lending. Ostay estimated that the number of authorized housing permits fell by 11 to 19 percent for every one percentage point that the market rate was above the usury ceiling. Robins found that for each percentage point by which market rates exceeded usury limits, single-family housing construction was reduced by 16 percent. Looking directly at mortgage lending, McNulty found that usury ceilings have an impact on the supply of credit even before the average market rate hits the ceiling. He estimated that as the average market rate rose from a point below, but still close to the ceiling, mortgage lending was lowered 7.5 to 12.5 percent for each 1 percentage point rise in the market rate relative to the ceiling.⁴

Usury ceilings appear to have some adverse effect on the supply of consumer credit as well. In a technical study for the National Commission on Consumer Finance (NCCF), Robert Shay [21] found that state usury ceilings had a small but statistically significant negative effect on the number of consumer loans extended. Each 1 percentage point decrease in the usury ceiling on small loans was associated with 18 fewer loans per 10,000 families.⁵ In addition, Shay found that lower rate ceilings were associated with fewer new auto loans. However, he found no significant effect on the supply of credit to purchase other consumer goods (mobile homes, boats, aircraft, and recreational vehicles).

⁴Despite finding this impact on the number of loans extended, McNulty did not find that Georgia's ceiling had a significant impact on housing construction. McNulty believed this was because Georgia's ceiling was only moderately, and briefly, restrictive during the period under study.

⁵Shay also found a positive but insignificant relationship between the dollar volume of loan extensions and usury ceilings. If the average size of each loan were to rise while the number of loans fell, the usury ceiling might not affect the total dollar volume of loans extended.

The Credit Research Center (CRC) at Purdue University has conducted several studies of usury ceilings and consumer credit. In one such study, Johnson and Sullivan [8] found that a 1977 change in Massachusetts law which lowered the usury ceiling on small loans was an important factor in the 12.5 percent drop in the amount of such loans outstanding in that state between 1975 and 1979.

In another study for the CRC, Richard Peterson [17] compared urban consumer credit markets in Arkansas, which had a 10 percent comprehensive usury ceiling, with similar credit markets in Illinois, Wisconsin, and Louisiana, which had less restrictive ceilings. Although he found that residents of Arkansas obtained as much (or more) credit overall as consumers in the other states studied, he also found that consumers in Arkansas obtained significantly less cash credit and more point-of-sale credit (retail credit and credit cards) than their counterparts in the states with less restrictive ceilings. Here, as in the Minnesota mortgage market, the usury ceiling apparently did not reduce the total supply of credit, but it did cause consumers to substitute one type of credit for another—and, importantly, the change in the mix of credit favored lenders rather than consumers. Merchants and dealers who issue point-of-sale credit can compensate for the reduced profitability of their credit operations by raising prices on the goods they sell.

Noninterest credit conditions: usury ceilings and credit rationing

Altogether, the empirical research on the effects of usury ceilings largely substantiates the argument that binding usury ceilings lead to a reduction in the amount of credit provided by lenders. But credit transactions involve a number of terms other than the interest rate. Usury ceilings determine the price that lenders can charge, but they do not constrain the other conditions that lenders may choose to offer. Faced with a binding usury ceiling, lenders may be expected to alter these noninterest conditions in order

achieve a higher effective return on the smaller amount of credit they will offer. For example, by such means as strengthening loan terms, adjusting borrower-screening criteria, or increasing noninterest fees and charges, lenders may be able to skirt the impact of usury ceilings on their overall profitability. It is important to consider how these strategies affect the borrowing public.

As pointed out above, under binding usury ceilings borrowers demand more credit than lenders are willing to provide. This requires lenders to rely on nonprice means to allocate credit among potential borrowers. Many of the strategies lenders are likely to follow in this situation can be expected to concentrate the impact of usury ceilings on certain borrowers. For example, making loan terms more stringent reallocates credit away from those who are unable to afford larger down payments or the larger monthly payments necessitated by shorter maturities and higher minimum loan size. Determining credit-worthiness according to individual borrower characteristics rations credit away from high-risk consumers who might be willing to pay higher-than-ceiling rates. Finally, adding noninterest charges eliminates from the market those for whom these extra costs are too great.

By encouraging these lending practices, usury ceilings may fail to give consumers the protection and benefits which they were intended to provide. For example, usury laws may work against the goal of ensuring that credit is available to small, inexperienced borrowers. When lenders ration credit by some means other than price, small borrowers, low-income borrowers, and high-risk borrowers are likely to find it more difficult to obtain credit. Prime borrowers, on the other hand, may obtain even more credit than they would have at normal market interest rates. Furthermore, when lenders institute noninterest charges to compensate for interest rate ceilings, they effectively raise the cost of credit for the successful borrower. This means that, while a ceiling may reduce the explicit price of credit (the interest rate), it may not

result in lower overall costs of borrowing even for those able to obtain loans. The non-interest charges also make it more complicated for customers to comprehend the total cost of borrowing and make it more difficult to make well-informed credit decisions.

These lending practices and their undesirable consequences may exist in the absence of interest rate ceilings. However, some empirical studies have found that the extent to which these devices are used is influenced by the restrictiveness of usury laws. Several studies have established that loan terms do become less favorable to borrowers when usury ceilings become more restrictive. For example, the Minneapolis Federal Reserve Bank [3, 20] found that during one period when Minnesota's ceiling on mortgage loans was binding, the average maturity of conventional mortgages in the Minneapolis-St. Paul SMSA fell significantly. The same study found that required down payments increased much more sharply in the Twin Cities compared with SMSAs not subject to binding usury ceilings. Similarly, according to the New York State Banking Department [10], down payment requirements increased and maximum maturities decreased during the 1974 credit crunch when market interest rates rose above New York's 8.5 percent ceiling on mortgage loans.

Phaup and Hinton [18] actually measured the magnitudes of the changes in noninterest mortgage terms due to New York's usury ceiling. Using data on new mortgage lending for single-family dwellings in Schenectady, New York for 1961 through 1976, they estimated that for each 1 percentage point the market rate rose above the usury ceiling, there was a 4 percent shortening of mortgage maturities and an 8 percent decline in loan-to-value ratios.⁶

Peterson's study [17] indicated that usury ceilings have similar impacts on noninterest loan terms in the consumer credit market.

⁶Ostas also found mortgage down payments were larger and maturities shorter, the more binding the usury ceiling. The maturity effect, however, was not statistically significant.

This study found that maturities of auto loans in Arkansas were shorter than in states with less restrictive usury laws. In addition, the average minimum size for personal loans at commercial banks and credit unions was 2.5 times larger in Arkansas than in other states covered by the study. Peterson found that Arkansas lenders charged higher fees for mortgage credit investigations and appraisal than did lenders in other states with less restrictive interest rate ceilings. Arkansas residents also paid higher charges for checking accounts and overdrafts. (Moreover, retailers faced bigger discounts and less desirable terms when selling their retail credit contracts to other creditors.)

Empirical research has also tended to confirm the expectation that the burden of usury ceilings falls unevenly on the borrowing public. The availability of credit to certain groups of borrowers appears to depend on the restrictiveness of usury ceilings. Peterson, for example, found that cash credit was significantly less available to low-income and high-risk borrowers when usury ceilings were more restrictive. The lowest income group and the three highest risk groups of consumers in Arkansas obtained a larger proportion of their credit from point-of-sale sources than in other states in the study with more liberal interest rate ceilings. In their study of the Schenectady, New York mortgage market, Phaup and Hinton [18] found that lower income areas felt the impact of usury regulations on mortgage lending activity more than other areas. They found that mortgage activity in census tracts of the lowest economic stratum was more sensitive to the usury ceiling and to noninterest credit terms than mortgage lending in tracts characterized by higher economic status. Johnson and Sullivan [8] found that Massachusetts' lowered ceiling had a greater impact on the availability of small regulated loans than of large ones, particularly at small, local finance companies. They concluded that less prosperous consumers who needed and could afford only small loans "were progressively excised from this portion of the legal cash loan market" (p. 14).

The survey data collected by the National Commission on Consumer Finance (NCCF) have been used in several studies of the impact of usury ceilings on consumer credit markets. Greer's [7] analysis showed that differences in finance company rejection rates were closely related to differences in state usury ceilings. The lower were rate ceilings, the higher was the rate of rejection for personal loan applicants. Greer concluded from this study that, with higher allowable interest rates, lenders are more willing to accept risky borrowers and, consequently, binding ceilings make it more difficult for riskier borrowers to obtain credit. Finally, using the same NCCF data, Shay [21] found additional evidence that high-risk borrowers are most affected by usury ceilings. Generally, higher-risk borrowers obtain credit through auto dealers and finance companies rather than banks. The fact that the higher rate ceilings specifically applicable to auto dealers and finance companies were found to be responsible for curtailed credit in the new auto and personal loan markets led Shay to conclude that the burden of the ceilings falls largely on those whose credit standing is weakest.

The broad conclusion that emerges from these empirical studies is that usury ceilings create a climate in which lenders are able to pursue practices unfavorable to some or all borrowers. On balance, usury ceilings appear to be a type of regulation whose benefits to borrowers are extremely questionable. The primary benefit is a lower-than-market interest rate. But, depending on lenders' actions, borrowers may end up facing higher noninterest credit charges and less favorable terms as a result of usury ceilings. Moreover, attached to the lower-interest benefit of usury ceilings is a direct cost to the borrowing public in the form of a reduced supply of credit. Furthermore, it is likely that the cost of restricted credit availability falls disproportionately on high-risk, low-income borrowers—those whom usury ceilings are usually designed to protect.

Thus far, usury ceilings have been discussed in terms of their effect on individual

borrowers. Usury ceilings also affect consumers and the economy in a more general way. This broader impact is a consequence of the particular way in which interest rate regulation has been implemented in the United States.

Diversity of usury ceilings. Since colonial times, the responsibility for regulating interest rates on credit has rested with the states. As credit markets have evolved since that time, states have developed complex sets of statutes which apply to specific types of lenders and specific types of credit, often with different limits depending on the size of the loan. As a result, there is great diversity in the coverage of interest rate ceilings within individual states.⁷ Furthermore, there is also great diversity in ceiling rates and coverage across states.

These legal arrangements have important implications for the economic impact of usury ceilings. Lack of uniformity of limits and coverage means that some forms of credit are constrained by ceilings while others are not. Under these circumstances, lenders will want to shift their portfolios into loan categories which are not subject to binding ceilings.⁸

State-imposed usury laws establish interest rate ceilings on credit extended to borrowers within a particular state. But, since credit markets are not confined by state boundaries, lenders may find it more attractive to extend credit across state lines to borrowers in states which offer less constraining

usury laws. Thus, interstate differences in limits and coverage will distort the geographic distribution of credit and alter the allocation of funds to credit-sensitive economic activities.

Many of the studies cited previously provide implicit support for the notion that the diversity of usury ceilings among states affects the geographic distribution of credit. Studies comparing loan volumes across states with different usury ceilings suggest also that credit availability varies among states depending on the restrictiveness of their usury ceilings.

A study by the staff of the New York State Banking Department [10] shows somewhat more directly how credit flows away from states with restrictive usury ceilings. The study found that during the period 1966 to 1974, when national mortgage market rates were almost continuously above New York's usury ceiling, savings and loans in New York increased their proportion of out-of-state mortgage holdings from 6.5 percent to over 18 percent. Over the same period, in-state conventional mortgage holdings by these institutions fell from 67 percent of total assets to 47 percent and from 75 percent of total mortgages to 57 percent. Clearly, New York State S&Ls responded to the ceiling which bound in-state conventional mortgage rates by increasing their relative holdings of uncovered loan categories, including out-of-state mortgages.⁹

In the long run, state differentials in usury ceilings may even influence the location of suppliers of credit and of credit-sensitive economic activities. Arkansas, which had a low, comprehensive 10 percent usury ceiling, provides several examples of the locational effects. There are no consumer finance

⁷A 1981 listing by the Financial Institutions Bureau of the Michigan State Department of Commerce contains 25 different loan categories subject to interest rate ceilings imposed by state law. The effective maximum rates ranged from 5 percent on personal loans by individuals for nonbusiness purposes to 36 percent on loans by pawnbrokers. A 1980 survey of Iowa usury laws summarized that state's current interest rate ceilings under 9 categories, with maximum permitted rates ranging from 5 percent (the legal rate) to 36 percent (the maximum rate on the first \$500 of a loan by a chattel loan licensee).

⁸For example, according to an article in *Business Week*, March 22, 1982, finance companies are switching emphasis from consumer lending to commercial lending in part because commercial loans are generally exempt from usury regulation while consumer loan charges are not.

⁹Savings banks and state-chartered commercial banks did not exhibit the same large, steady increase in the proportion of out-of-state mortgage holdings. However, New York State savings banks already held almost one-half of their mortgages on out-of-state properties. Furthermore, in-state conventional mortgages, those subject to the ceiling, comprised very small proportions of the total assets of savings banks (approximately 12 percent) and commercial banks (approximately 2 percent) compared with S&Ls.

How ceilings vary among Seventh District states

	First mortgage	New auto loan	Bank credit card	Unsecured personal instalment loan*
Illinois	No limit by state law	No limit	No limit	No limit
Indiana	No limit by state law	←	21% or { 36% on unpaid balance to \$540 18% on unpaid balance to \$1,800 15% on unpaid balance over \$1,800	→
Iowa	No limit by state law	21%	18% on unpaid balance to \$500 15% on remainder	31% of unpaid balance to \$150 24% of unpaid balance to \$300 18% of unpaid balance to \$700 12% of unpaid balance to \$2,000
Michigan	No limit due to federal override	16.5%	18%	18% or { 31% of unpaid balance to \$500 13% of unpaid balance to \$3,000
Wisconsin	No limit by state law	Greater of 18% or 6-month T-bill rate + 6%	18% or no limit when 2-year T-bill rate remains above 15% for 5 consecutive Thursdays**	Greater of 23% or rate on 2-year or 6-month T-note + 6%

*Rate limits often vary by type of lender. Limits shown are highest permitted for any lender. Under the 1980 Monetary Control Act, banks, S&Ls, and credit unions may charge the greater of the Federal Reserve discount rate plus 1 percent or the highest rate permitted any state lender for the type of loan in question.

**The operative limit has been 18% since the law became effective November 1, 1981.

companies located in Arkansas and that state has a much larger number of pawnbrokers than Illinois, Wisconsin, or Louisiana, which have more lenient ceilings on consumer credit. In addition, a survey of merchants in the adjacent cities of Texarkana, Texas and Texarkana, Arkansas [1] revealed that there were many more automobile, furniture, and appliance dealers on the Texas side of the border than on the Arkansas side. Furthermore, 84 percent of the merchants interviewed indicated that Arkansas' usury ceiling had been an important factor in their decision to locate in Texas.

Differences in state usury regulations also were cited in recent decisions to relocate the credit card operations of Citibank, First National Bank of Maryland, Philadelphia National Bank, and the First National Bank of Chicago.¹⁰ In addition, banks in Seattle and Detroit are reported to be considering relo-

cating credit card operations to other states because of usury limits.¹¹

The macroeconomic impacts of usury ceilings. When usury ceilings make it unattractive to make loans in a particular state, the adverse impact of the ceilings falls most heavily on the credit-sensitive sectors of the state's economy. The health of a state's residential construction industry, for example, can be seriously affected by its usury regulations. As Ostay and Robins showed, housing starts and permits are sensitive to ceilings on mortgage rates. Furthermore, the New York State Banking Department concluded that New York's restrictive usury ceiling contributed to the depressed condition of the housing market in that state during the late 1960s and early 1970s.

Similarly, there is evidence that restrictive usury ceilings on automobile loans and

¹⁰See *Wall Street Journal*, December 5 and 15, 1981 and *The American Banker*, September 30 and October 30, 1981. The ability of banks to take advantage of interstate differences in ceilings on credit card lending derives from a 1978 Supreme Court ruling. In *Marquette National Bank v. First of Omaha Service Corporation*, the Court determined that national banks may charge out-

of-state credit customers the rate permitted by the law of the bank's home state. See *Federal Reserve Bulletin*, vol. 67 (February 1981), p. 181 fn. The same option does not apply to department stores, gasoline companies, or other issuers of retail or sellers' credit cards.

¹¹See *The American Banker*, May 6, 1982.

other forms of consumer credit can affect the level of consumer purchases and retail trade. The survey of merchants in Texarkana, Arkansas, and Texarkana, Texas [1] revealed that approximately 38 percent of credit sales among merchants on the Texas side of the border were to customers from Arkansas. This substantial out-of-state shopping, which is presumably due to the 10 percent usury ceiling in Arkansas, represents a significant loss of potential business revenues for Arkansas-based retailers. Furthermore, as the authors of the study concluded, it represents a loss of jobs and local tax revenues.

A state's usury ceiling is likely to have far-reaching consequences for the state's real economy. Its effects can be expected to show up first in the level of credit-financed expenditures and eventually in levels of state employment and income. A study by Richard Gustely and Harry L. Johnson, described by Harold Nathan [14], used an econometric model of Tennessee to examine the impact of that state's comprehensive 10 percent usury ceiling. According to Nathan, the authors found that Tennessee's economy grew faster than the national economy except at times when market interest rates exceeded the state usury ceiling. The ceiling was estimated to have cost the state annually between 1974 and 1976 \$150 million in output, \$80 million in retail sales, and 7,000 jobs. This study indicates how restrictive usury ceilings may deprive a state of the credit needed to keep its economy expanding. All residents of the state are affected, not only those borrowers who find credit difficult to obtain.

Usury ceilings and competition

As the foregoing discussion has shown, the impacts of usury ceilings extend well beyond simply holding a lid on interest rates. The adverse effects on the economy as a whole may even be sufficient to outweigh the benefit to those who are able to borrow at below-market interest rates. However, a common argument is that without usury laws borrowers would be forced to pay exorbitant

interest rates, or at least rates that were unreasonable in relation to the cost of supplying credit. Thus, evaluation of usury laws is not complete without a consideration of the consequences of not having usury ceilings.

According to economic theory, a competitive market is sufficient to prevent lenders from exercising power over pricing or earning more than a normal return. The price established in a competitive market reflects suppliers' costs of providing the given amount of the good. To be sure, removing a binding usury ceiling will result in higher interest rates. However, if credit markets are competitive, the resulting market rate of interest will not exceed lenders' cost of providing credit. It is when competition is absent that consumers may face unreasonable interest rates. Thus, the consequences of not having usury ceilings depend importantly on the competitiveness of credit markets. Indeed, the absence of competition is the only clearly defensible theoretical reason for imposing a usury ceiling.

We might argue that U.S. credit markets today are fairly competitive. Many types of institutions—banks, finance companies, credit unions, thrift institutions, and retailers—make up the supply side of the credit market and frequently offer credit in closely substitutable forms. Moreover, in many (but not all) local market areas, consumers can choose among several lenders of any particular institutional type. However, competition in credit markets may be hampered by the fact that lending institutions have become specialized according to the types of credit they offer and/or the types of borrowers they serve. In the area of personal consumer credit, for example, banks and other depository institutions primarily offer cash credit to lower risk borrowers while finance companies specialize in servicing higher risk customers. Thus, the question of whether credit markets are sufficiently competitive to protect consumers from unreasonable interest charges is one which must be answered empirically. Unfortunately, studies of the extent of competition in credit markets do not provide a definitive answer to

the question.

Smith [22] concluded from a study of the structure of rates on personal loans at commercial banks that there is a considerable degree of interbank competition for the more profitable type of loans, but that this does not extend to the small high-risk loan where the social problems of credit regulation are most acute (p. 524). He also found evidence of interinstitutional competition in the influence of consumer finance companies on bank loan rates and portfolio composition. On the other hand, Geer's analysis of the NCCF data on personal loan rates [5] did not allow him to conclude firmly that finance companies and commercial banks compete vigorously.

The NCCF Report provided some evidence of the existence of competition in its findings regarding the pattern of interest rates across states. The Commission's 50-state survey revealed that rates on auto loans and unsecured loans at banks clustered within a rather narrow range (the market rate?) regardless of state usury ceilings.¹² Also, average observed interest rates for these loans were in the same range even in states with no ceiling at all.¹³ In contrast, in the finance company loan market, the Commission noticed a much closer correspondence between observed rates and the state usury ceilings.

The conflicting findings of these few studies illustrate the difficulty in reaching a definitive conclusion about the extent of competition in credit markets. The studies described here suggest that competitive behavior may vary considerably among different segments of the credit market. Rates on finance company personal loans, for example, appear to be set less competitively than rates on auto

loans or personal loans extended by banks. Another factor which makes an overall assessment of competition difficult stems from the potentially great differences in local market conditions. Lending institutions located in urban areas may face much greater competitive pressures than lenders in smaller cities or towns.

What can be stated definitively, however, is that from the point of view of protecting borrowers from unreasonable interest charges, competition is desirable, and the more the better. To the extent that competitive pressures arise from the presence and ready entry of many firms into the market, consumers are best served by policies that foster these conditions in credit markets.¹⁴

There is some evidence that usury ceilings, rather than fostering these conditions, tend to restrict competition in some parts of the credit market. The NCCF found, for example, a strong inverse relationship between statewide finance company concentration ratios and the average level of legal rate ceilings on personal loans. (Higher concentration ratios are usually associated with lower levels of competition.) The relationship was even stronger within the group of states having low rate ceilings. The finding that lending firms tend to be more highly concentrated in states with lower rate ceilings can be attributed to several factors. First, low usury ceilings drive inefficient firms out of the market, thereby increasing concentration [6, p. 1377]. In addition, low usury ceilings create barriers to entry making it difficult for new firms to compete during the start-up phase [15, p. 137].

¹⁴The literature on the structure of banking markets has established that firm entry and concentration have highly significant, although quantitatively small, effects on competitive pricing behavior. See Stephen Rhoades, *Structure-Performance Studies in Banking: A Summary and Evaluation*, Staff Economic Studies 92 (Board of Governors of the Federal Reserve System, 1977); Harvey Rosenblum, "A Cost-Benefit Analysis of the Bank Holding company Act of 1956," *Proceedings of a Conference on Bank Structure and Competition* (Federal Reserve Bank of Chicago, 1978); and George Benston, "The Optimal Banking Structure: Theory and Evidence," *Journal of Bank Research*, vol. 3 (Winter 1973), pp. 220-37.

Rate ceilings may impede competition in various other ways. The NCCF argued that different rate ceilings for different types of consumer lenders tend to segment the market artificially and restrict interinstitutional competition [15, p. 147 and 5, p.60]. A recent study by Sullivan for the CRC [23] supports this argument. She found that the extent of competition between banks and finance companies for consumer loans depended on whether the two types of lenders operated under the same or different rate ceilings. In a local personal loan market in Illinois, which differentiates ceilings by type of institution, borrowers from banks had significantly different risk characteristics than borrowers from finance companies. Such segmentation was not found in a comparable local loan market in Louisiana where all lenders are treated equally.

Another difficulty with usury ceilings, suggested by Shay's findings, is that rate ceilings may offer convenient focal points for setting rates higher than they might otherwise be set, when lenders already have some power to set prices [21, p. 457]. Finally, the Treasury Department's Interagency Task Force on Thrift Institutions [24] recently argued that very low usury ceilings discourage thrift institutions from adding consumer loans to their portfolios and from actively competing with finance companies by offering consumer loans. According to all of these arguments, the removal or easing of usury ceilings would tend to make credit markets more competitive.

Knowledgeable, informed borrowers also foster competition in credit markets. When consumers do not know or cannot compare rates being charged by various lenders, each lender has more scope to charge whatever rate he chooses. Thus, a high level of borrower awareness can place a natural constraint on interest rates, in lieu of the external constraint of a usury ceiling. Indeed, as the NCCF pointed out, "Not all consumers need be aware of the APR [annual percentage rate] or shop for credit to bring about effective price competition. A significant marginal group of consumers who are aware and do shop is sufficient to 'police' the market" [15,

p. 175].

It is difficult to say exactly what the size of that group needs to be, but the Commission suggested that one-third to one-half of all borrowers is certainly sufficient. By this criterion, today's consumers seem to exert a rather effective pressure on lenders. A 1977 Consumer Credit Survey sponsored by the Board of Governors of the Federal Reserve System [4] classified 65 percent of consumers as aware of APRs on revolving credit. The awareness level on bank credit cards was 71 percent, and on closed-end credit it was 55 percent.

Consumer awareness levels were not always this high. Surveys comparable to the 1977 one were conducted in 1970 and 1969. Only 38 percent of credit users were found to be aware of APRs on closed-end credit in 1970 and only 15 percent in 1969.¹⁵ Awareness levels on retail revolving credit and bank credit cards were only 35 and 27 percent, respectively, in the 1969 survey, although they stood at 56 and 63 percent by 1970.

At least some of the improvement in consumer awareness since 1969 revealed by these surveys is probably attributable to the consumer protection legislation enacted in the late 1960s and 1970s. The Truth-in-Lending Act (Title I of the 1968 Consumer Credit Protection Act) was passed only shortly before the 1969 survey, and its impact seems evident in the 1970 survey results. This association of improved consumer awareness with the passage of Truth-in-Lending suggests that, in the absence of usury ceilings, such legislation could effectively ensure consumers of reasonable interest rates by fostering more intense price competition in the credit market.

Policy action and options

Over the past few years there has been a spate of legislative activity affecting usury

¹⁵In analyzing the results of the 1970 survey, the NCCF found awareness levels in the "general market"—the market comprised mainly of higher income, more highly educated, white, homeowners borrowers who live in nonpoverty areas and use mostly cash credit—sufficient to police the market. The high-risk market, on the other hand, had disturbingly high levels of unawareness.

regulations at the national and state levels. Probably all of these legislative changes have helped to ease the adverse economic effects of binding usury ceilings during the recent period of high market interest rates. However, the specific policies implemented have differed greatly in the extent of their move toward deregulation; not all have involved completely removing legal price constraints.

For example, some states have acted to raise, but not eliminate, ceilings when they have impinged on credit availability and economic activity. This approach preserves fixed statutory interest rate limits and whatever protection they might afford consumers from outrageously high interest charges. But, if state legislatures intend to avert the negative economic impacts of fixed usury ceilings, they must act deliberately and quickly to adjust ceilings limits in response to changes in market rates—a task made more difficult by the increased volatility of rates in recent years.

A second approach, tying ceiling limits to market interest rates, avoids this problem and at the same time preserves the protection afforded by statutory limits. Some states have instituted legislation to allow ceilings to float, usually by stipulating limits several percentage points above certain specified interest rates—such as Treasury bill yields or the Federal Reserve discount rate—over which neither borrowers nor lenders have control. These usury ceiling limits, then, adjust automatically at frequent intervals to changes in the market interest rate. While floating rate ceilings are designed to be nonbinding with respect to the rates charged on the vast majority of loans, they prevent lenders from charging rates which are out of line with the market.

The difficulty with floating ceilings is in choosing a tie-in formula which will keep the ceiling above the average market rate over time. In a 1979 study of floating ceilings in the mortgage market, the Federal Reserve Bank of St. Louis [11] concluded that ceiling rates set 2.5 percentage points above yields on ten-year U.S. Treasury bonds or 5 percentage

points above the discount rate were high enough not to distort the flow of credit to housing. Other floating rate schemes, however, continued to bind mortgage rates and impede housing activity.

Action by state legislatures has not been limited to partial easing of controls, by raising limits or implementing floating ceilings. Many other states have completely eliminated their usury ceilings. These states can and still do regulate lenders in other ways, of course.

In addition to these changes on the state level, the federal government has also acted recently to remove legal constraints on interest rates. The 1980 Monetary Control Act temporarily preempted state usury limits on mortgage loans and on large business and agricultural loans. The same act also overrode state interest ceilings on loans by national and state banks, S&Ls, and credit unions when the state ceiling is below the local Federal Reserve discount rate plus 1 percent. Proposals to extend federal preemption to include consumer credit were considered during the 1981 congressional session.¹⁶

This move by the federal government to supplant state usury regulations raises an important and difficult issue. From an economic point of view federal action has an advantage over states acting individually. It would impose uniformity on credit markets, eliminating legislatively created differentials in interest rates that artificially distort credit flows among states. (Uniformity could be achieved, of course, whether the federal government imposed its own fixed usury ceiling, instituted floating ceilings, or eliminated ceilings altogether.) From another point of view, however, federal action may not be so desirable. The economic advantage of uniform treatment needs to be weighed against the political implications of the federal government stepping into an area—usury regulation—which has traditionally been under the jurisdiction of the states. Thus, the

¹⁶A Senate bill was introduced by Senator Lugar and incorporated in S. 1720 by Senator Garn; House bills were sponsored by Representatives John La Falce and William Alexander.

question whether deregulation of usury ceilings should be left to individual states or whether it is best accomplished by federal preemption should not be answered on the basis of economics alone.

Summary

Economic research clearly supports the current legislative moves toward deregulation of usury ceilings. The evidence on the impact of usury ceilings shows that they have not achieved their objectives. According to the empirical studies surveyed, usury ceilings have significantly reduced the availability of

credit and created hardships for those who were supposed to be protected. Ceilings have encouraged lenders to use such credit rationing devices as higher down payments, shorter maturities, and higher fees for related non-credit services, which increase the effective interest rate. They have curtailed the amount of credit available to lower income and higher risk borrowers, harming primarily those individuals whom the ceilings are intended to benefit. Finally, the lack of uniformity of usury laws across states has distorted credit flows and economic activity, favoring those states and regions which are less regulated.

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