

A BUSINESS AND FINANCIAL REVIEW BY THE FEDERAL RESERVE BANK OF CHICAGO

November/December 1978

**ECONOMIC**  
**PERSPECTIVES**

Capital spending—the sluggish boom

The new grain reserve programs

Some insights on member bank borrowing

Automatic transfers: Evolution of  
the service and impact on money

Index for 1978

## CONTENTS

November/December 1978, Volume II, Issue 6  
**ECONOMIC PERSPECTIVES**

Single-copy subscriptions of **Economic Perspectives**, a bimonthly review, are available free of charge. Please send requests for single- and multiple-copy subscriptions, back issues, and address changes to Public Information Center, Federal Reserve Bank of Chicago, P. O. Box 834, Chicago, Illinois 60690, or telephone (312) 322-5112.

Articles may be reprinted provided source is credited and Public Information Center is provided with a copy of the published material.

Controlled circulation postage  
paid at Chicago, Illinois.

### **Capital spending—the sluggish boom** 3

*Business outlays on new capital goods will probably exceed \$220 billion in 1978.*

### **The new grain reserve programs** 10

*Under the Food and Agricultural Act of 1977, the accumulation of a buffer stock of grain has been mandated.*

### **Some insights on member bank borrowing** 16

*Member bank borrowing at the Federal Reserve banks is affected by a number of elements.*

### **Automatic transfers: Evolution of the service and impact on money** 22

*Commercial banks now offer automatic transfers from consumer savings to checking accounts.*

### **Index for 1978** 27

# Capital spending—the sluggish boom

George W. Cloos

Business outlays on new capital goods—structures and equipment—will probably exceed \$220 billion in 1978. That will be about 16 percent more than the record high set last year. Perhaps half the rise will represent price inflation.

As a proportion of GNP, capital outlays will increase to about 10.6 percent this year. In a statistical record that begins in 1929, this ratio has been surpassed only twice, in 1966 and 1974, and then only slightly. Equipment order backlogs and the recent high volume of nonresidential construction contracts suggest the uptrend will continue into 1979.

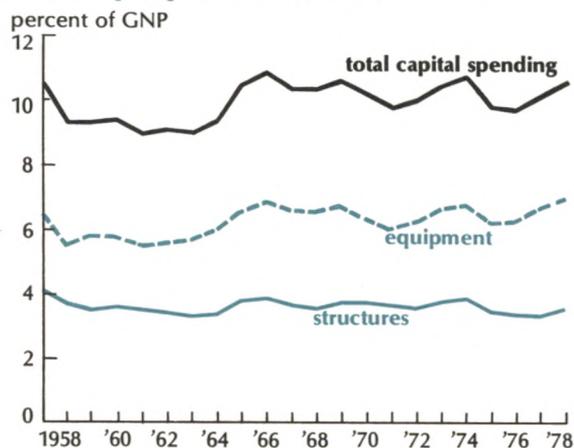
Capital spending has been frequently characterized as sluggish. This seems paradoxical in view of the high current and prospective levels of spending. The judgment takes on more weight, however, when relative rates of inflation and the growing amount of capital spending going for nonproductive purposes that do not add capacity or improve efficiency are taken into account.

These nonproductive capital outlays include spending to comply with government regulations relating to environment, health and safety, and other social objectives. They also include energy-related spending to develop increasingly scarce resources, to improve fuel efficiency, and to convert operations to coal and other fuels. They include substantial outlays on projects that have been delayed or abandoned because of lawsuits, often costly in themselves, pressed by both public bodies and private parties. In some industries—motor vehicles, for example—management contends that nonproductive outlays account for the bulk of current and prospective capital spending programs.

Capital spending data usually appear as gross figures, rather than as net figures that allow for erosion of the existing capital stock. The same factors that force nonproductive outlays have also stepped up obsolescence and retirements of existing assets.

These nonproductive outlays cannot be quantified with precision. It seems probable, however, that current capital spending does not fully offset the erosion of existing stock. If so, net investment is actually negative. Aside from adding to capacity, a high level of capital spending is essential to the fight against inflation. New and better capital goods provide the surest means of increasing productivity (output per worker hour) and holding down costs of production. One thing is certain. Capital spending will have to increase substantially relative to GNP if living standards are to rise, or even be maintained.

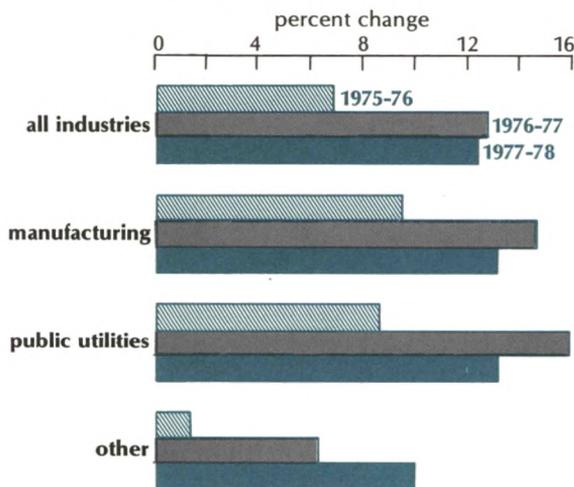
## Business capital spending approaches record proportion of GNP



### Strength widespread

The Department of Commerce does not publish an industry breakdown of the GNP component “nonresidential fixed invest-

## Industry boosts capital spending for third straight year



ment.” Such breakdowns are available, however, in another less comprehensive series, “Expenditures for New Plant and Equipment,” based on quarterly surveys of business plans.

Like Commerce’s nonresidential fixed investment, the data on plant and equipment exclude expenditures overseas. They also exclude outlays by agricultural and nonprofit organizations, and any outlays that are written off as they occur, as opposed to fixed assets that are depreciated over time. Current write-offs of spending on oil and gas exploration and development, for example, are large.

Spending on plant and equipment reported in this series is now expected to reach \$152.5 billion in 1978, up slightly from estimates earlier this year. That will be 12.3 percent more than in 1977, when P&E outlays increased 12.7 percent.

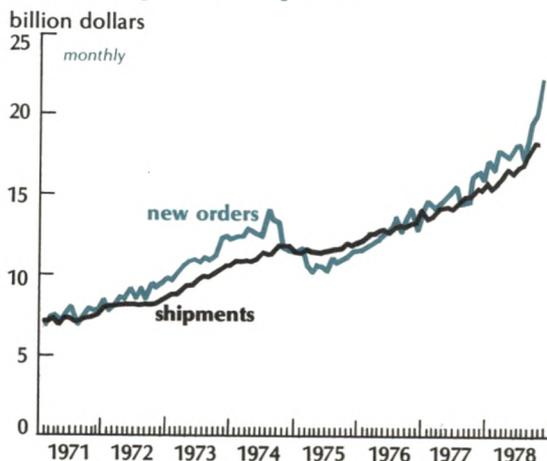
Almost all industries plan to increase their capital spending this year, the notable exception being ocean shipping lines. The biggest outlays in 1978, as in most years, will be made by electric utilities, which expect to spend \$24.5 billion on plant and equipment, 14 percent more than in 1977. The communication industries, mostly telephone companies, expect to increase their spending 15 percent.

Larger-than-average increases in manufacturing are reported for the electrical machinery, building material, food processing, and textile industries. After reducing its outlays in 1976 and 1977, the steel industry expects to increase its outlays this year, but only 2 percent. Transportation companies, hard pressed to meet demands, plan large increases in spending. Airlines, railroads, and trucking companies are buying equipment at such a rate that suppliers are operating at full capacity with backlogs stretching months, in some cases years, into the future.

Output of equipment and components is especially important to the Seventh Federal Reserve District states. With 15 percent of the country’s population, the five states of the district—Illinois, Indiana, Iowa, Michigan, and Wisconsin—produce almost a third of the producer equipment. Demand this year has been especially strong for equipment produced in the district for construction, earth-moving, transportation (heavy trucks, trailers, freight cars, and locomotives), agriculture, material handling, machine tools, and electrical and mechanical controls.

Strength in orders for cutting-type machine tools, also important in the district, is particularly significant. These are the machines that make machines. Through September, new orders were running 52 per-

## New orders for capital goods have outpaced shipments



cent higher than a year earlier. Shipments were up 40 percent. The order backlog on October 1, at \$2.6 billion, was 55 percent higher than a year before. Earlier this year, orders for cutting-type machine tools were dominated by the motor vehicle industry. More recently, however, strength has been widespread, covering most industries that produce equipment and components for both producers and consumers.

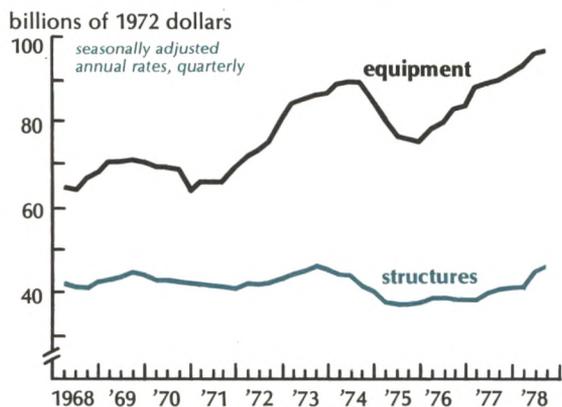
### Equipment and structures

Equipment accounted for 66 percent of business capital spending last year. The rest went for structures. Early in the decade, the ratio was 62:38. Twenty years ago, it was about 60:40.

Adjusted for inflation, the trend toward equipment is even more pronounced. In constant dollars (1972 prices equal to 100), the ratio last year was 69:31. It was 61:39 in the early seventies. Twenty years ago, it was 55:45.

Several factors are reflected in the growing emphasis on equipment over buildings. One is that modernization projects are usually made up mostly of equipment. The same is true for environmental projects. Construction outlays are usually aimed more at basic expansion. But the sluggishness of spending on new structures also reflects overbuilding of office and retail facilities during the heyday of the REITs in the late sixties and early seventies.

### Business equipment outlays surge while structures lag



Adjusted for inflation, outlays on equipment declined 17 percent during the recession, dropping from a peak rate in the second and third quarters of 1974 to the trough in the fourth quarter of 1975. By the third quarter of 1978, they were up 28 percent from the trough and 7 percent from the 1974 peak.

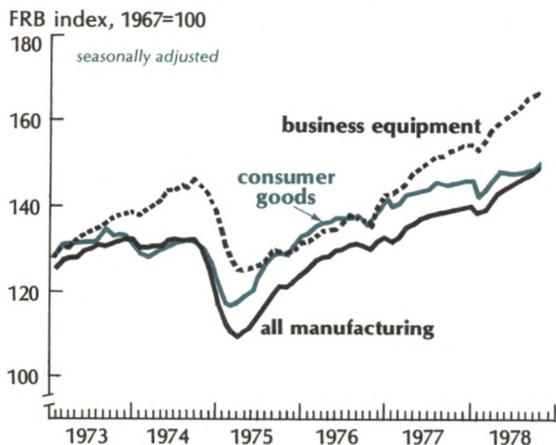
Outlays on structures peaked earlier in the last cycle than spending on equipment. From a high in the third quarter of 1973, spending on structures (again adjusted for inflation) declined 21 percent to the 1975 low. It rose slowly in 1976 and 1977, and at a faster pace this year. In the third quarter, outlays for business construction were running 23 percent higher than at the trough of the recession. But they were still 3 percent less than at the peak in 1973. The volume of construction contracts suggests that the new highs in business construction may be reached late this year or early next year.

### Equipment output soars

The index of industrial production prepared by the Federal Reserve Board provides a broad measure of output. Being in physical terms, it does not have to be adjusted for inflation. Component series of the index are aggregated into market groupings, one of which is business equipment. This category, which accounts for 13 percent of all industrial production, includes all types of producer equipment used by farms, factories, offices, construction, transportation, and utilities. Unlike the Commerce series on outlays, the business equipment index includes output destined for export, an important segment of the output of some types of equipment. Also reflected in this series are changes in manufacturers' inventories, both of goods in process and finished products.

Equipment output was strong in 1974, right up to the sharp downturn that began in October. Even then, production of equipment did not fall off as much as most manufacturing. The index shows production of business equipment at 147 (1967=100) in September 1974, compared with an average of 132 for all manufacturing. By March 1975,

## Gain in equipment output has left consumer goods far behind



output of business equipment had fallen 14 percent, but total manufacturing was down 17 percent. In most recessions, business equipment output has declined more than other manufacturing, often much more. Moreover, instead of lagging the general upswing as had been typical, business equipment output began picking up again in 1975, almost simultaneously with other manufacturing.

Equipment manufacturing recovered more slowly than total manufacturing in 1975 and 1976, but it has been rising faster for the past two years. In September 1978, business equipment output was 9.3 percent higher than a year before. Total manufacturing was up 6.6 percent. Output of business equipment was 13.4 percent higher than at its 1974 peak. Manufacturing was 12.2 percent higher. This is a striking performance. Until October 1974, equipment manufacturers were hard pressed to meet demand.

The surge in equipment output since 1976 has attracted less attention than the surge of 1973 and 1974. This may be because most producers have been able to expand output more in line with demand. In 1973 and 1974, *everything* was in short supply. Bottlenecks held up the production of components, like engines, transmissions, and axles. Since then, manufacturers have expanded capacity to produce these types of com-

ponents, eliminating many of the earlier bottlenecks and alleviating others. The biggest constraint in recent months has been supplies of large and special castings, a development that reflects the closing of many small foundries that did not meet pollution standards.

## Inflation and investment

Business has been getting less for its capital spending dollars. Changes in quality always present a problem in comparing price developments. This is particularly true of producer equipment. Every new line of producer equipment incorporates new and often radically different features. To a lesser extent, comparisons of construction costs also present problems. Despite these limitations, it seems clear that prices of plant and equipment, as estimated by the Department of Commerce, have been increasing faster than the general price level.

	Total GNP	Business fixed investment	Structures	Equipment
	(percent increase in average prices)			
1957-72	+54	+41	+55	+33
1972-77	+42	+47	+60	+41

From 1957 to 1972, the general price level, measured by the GNP deflator, rose faster than the average prices of equipment and structures. From 1972 through 1977, however, prices of structures and equipment rose faster than prices generally. Prices of structures and equipment rose more during these last five years than in the previous 15 years. Construction costs rose faster than equipment prices throughout this 20-year period, the difference reflecting not only the rapid rise in costs of construction labor and materials but also higher costs of complying with regulations. Productivity performance in construction has compared poorly with other activities.

Prices of plant and equipment this year will probably average about 7.5 percent

higher than last year. Most analysts expect a similar or larger increase next year. Such increases would be about in line with increases expected for prices in general.

Unfortunately, higher prices for labor and materials are not the only factors causing increases in the final cost of particular projects, which sometimes far exceed original estimates approved by corporate managements. Delays and modifications required by government decrees have frequently been a major factor.

### Regulatory compliance

Companies have spent over \$38 billion since 1972 on facilities to “abate and control” air, water, and solid waste pollution. This accounts for over 5 percent of all their spending on plant and equipment. Most of this spending has been to bring into compliance with the Clean Air Act and the Water Pollution Control Act. For some industries, such as primary metals, paper, chemicals, petroleum refining, and electric utilities, the proportion of P&E spending for pollution has been much higher, ranging up to 16 percent.

Although the proportion of spending on plant and equipment for pollution control continues to rise, the rate of rise has slowed.

Some industries, having come a long way toward compliance with regulatory deadlines, have been able to reduce their spending.

The total cost of pollution control remains uncertain. Data on pollution expenditures do not include outlays to redesign and tool up for new products, especially vehicles, that meet emission and fuel economy standards. Nor do they include the often substantial costs of operating the equipment. And finally, there is no accounting for facilities that were closed because of the costs of meeting standards. Compliance considerations may be only one of several factors leading to decisions to close older facilities.

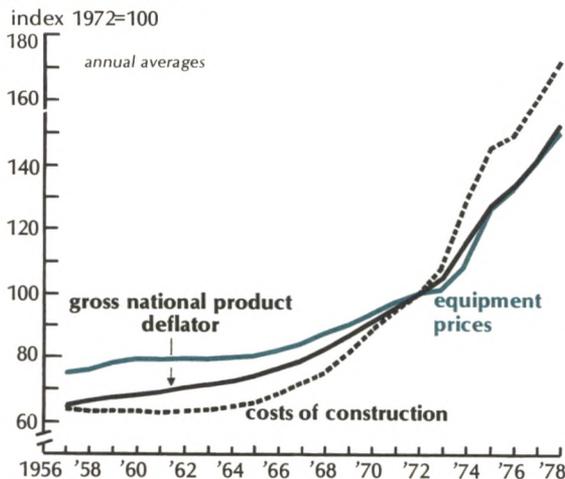
New rules for abatement of pollution are under study at state and federal levels. A continuing argument rages over the proposed installation of “scrubbers” at coal-fired electronic generating plants to reduce sulfur dioxide emissions. Some experts contend that scrubbers may cost billions and still not operate effectively.

Large sums have been spent on complying with state and federal laws to protect health and safety, control toxic substances, reduce noise, protect endangered species, and maintain or restore scenic areas. No data on these costs are available.

Another unquantified cost has involved postponements and cancellations of projects as a result of litigation, public and private. Some of the most spectacular examples relate to nuclear power plants, pipelines, metal processing plants, oil refineries, chemical complexes, highways, airports, dams, and harbor facilities. Local zoning authorities often reject proposed projects, citing the limitations of water, sewerage, and utility facilities—or simply to slow growth in the area.

Some executives say that regulations in themselves are less of a problem than uncertainties related to shifting policies and conflicts among regulatory bodies. If mandated restrictions on new projects were clarified, eased, or expedited, a heavy volume of postponed investments would doubtless be activated.

### Costs of new business structures have soared



There can be no question that many of the restrictions on the operation and development of facilities are long overdue. But it should also be recognized that untold billions—some suggest a round figure of a trillion dollars—will be needed to achieve announced goals for the next decade.

### Energy needs

Fuel prices have increased two, three, and four times in the past five or six years. There are various reasons: the OPEC oil cartel, the depletion of readily available domestic oil and gas reserves, restrictions on the use of high sulphur coal and oil, closings of older underground coal mines, and opposition to the development of new coal mines, nuclear plants, and pipelines.

Costs of facilities to provide new sources of energy have increased apace with the price of fuel. Huge outlays have been made to bring oil from the North Slope and from fields offshore and to produce synthetic natural gas (SNG). Large investments, still unproductive, have been made to extract oil from shale and gas from coal. Outlays on solar energy, fast breeder reactors, and other unconventional sources are still written off as research and development.

Conservation of energy involves large expenditures that would not have been undertaken in the days of cheap fuel. Examples include additional insulation, redesign or replacement of equipment, and conversions from oil or gas to coal—sometimes reversing changes made only a few years ago. Airlines have found that fuel costs alone can justify the replacement of aircraft. The auto industry is in the midst of a vast program to build cars and trucks that use fuel more economically. Nearly all the capital outlays of the auto industry in recent years can be traced to efforts to decrease emissions and to improve fuel economy.

As in the case of regulation, businessmen complain of uncertainties in government energy policy. New plants are usually designed to use particular fuels, and related decisions must be made early in the planning

process. Mandatory curtailment of supplies may mean plant shutdowns or emergency conversions, similar to those required during the natural gas crisis in January 1977.

### Capacity limitations

Government could induce business to step up its capital spending to some extent by increasing the investment tax credit, lowering tax rates, or liberalizing depreciation methods for income-tax purposes. The main limitation, however, is not funding but physical capacity. This reflects an inadequate level of capital investment in the past decade, especially in industries producing basic materials.

Estimates of utilization rates of manufacturing capacity suggest a significant margin of unused resources. Federal Reserve Board data show manufacturing as a whole operating at about 85 percent of capacity. Operating rates for broad industry groups are about the same.

The experience has been that an overall operating rate of 88 percent is close to *practical* capacity. Overall rates of utilization, however, are of little use in analyzing the potentials of specific industries.

For several months, for example, there has been a serious shortage of cement. Users have been put on allocation. Prices have increased sharply. Many projects are being delayed by the shortage.

There are several reasons for the cement shortage: the high rate of consumption, strikes that slowed production, closings of obsolete plants, and transportation costs that have kept cement from moving from areas of excess supply to areas of scarcity.

Some equipment producing industries are operating at maximum rates. Included are industries producing heavy trucks, aircraft, freight cars, and locomotives—all reflecting the heavy use of existing transportation equipment. If transportation facilities are fully utilized, a lid is placed on the whole economy.

Other basic industries operating at practical capacity are those producing machine

tools, construction equipment, gypsum board, insulation, lumber, petroleum products, and some aluminum and steel products. In addition to castings, cobalt and molybdenum are in short supply. Both these elements are needed in steel alloys used mainly in capital equipment.

More oil products and steel could be imported, but at the cost of additional deficits in the balance of trade. At current levels of economic activity, the country must import over 40 percent of its oil and perhaps 10 percent of its steel. At least half of various essential minerals are imported, and all of some.

Equipment industries are short of skilled workers, especially in the metalworking trades. Without adequate reserves of both workers and experienced managers, industries cannot go into additional shifts. The skilled worker shortage cannot be alleviated rapidly because proper training of apprentices takes years.

### **No easy solutions**

Although business capital spending has increased rapidly in the past three years, assurance of a comfortable and prosperous future depends on substantial further growth in these investments. Needed especially are renovations and expansions in the basic industries: steel, aluminum, electric power, minerals of all types, oil and gas, and coal. Often new large-scale facilities take three,

four, or more years from conception to completion—a span often lengthened nowadays by regulatory processes.

A substantial part of capital spending now is required to meet social rather than economic objectives, to conserve energy, and expand sources of fuel. For that reason, there is little use comparing the current proportion of capital spending to GNP with peak proportions of the past. Even higher levels are needed.

A McGraw-Hill preliminary survey released in November indicates capital spending will increase 10 percent in 1979, but only 2 percent in real terms. Realization of even such an inadequate rise will probably depend on a further expansion of the general economy. Either a recession (predicted by some analysts) or additional increases in interest rates (associated with reduced availability of credit) would cause spending plans of some companies to be postponed or scaled down. Fears that arbitrary wage and price rules may be mandated by the government also increase uncertainties and, therefore, the risks of financial loss.

Investment activity is limited more in late 1978 by availability of men and materials than by availability of funds. Partly reflected in these limitations are the demands placed on resources by consumers and governments. Investment in plant and equipment requires that current consumption be limited to provide the means for increasing consumption in the future.

# The new grain reserve programs

Gary L. Benjamin

Large stocks of grain are nothing new in this country. During the fifties, stocks grew to particularly burdensome levels as a result of government programs that kept grain prices above market clearing levels without facing up to the controls needed to rein in the overproduction capacity of U.S. agriculture. These policy shortcomings were corrected in the sixties. Yet grain stocks were still considered excessive in the early seventies.

Despite this backdrop, the concept of a grain reserve evolved rapidly during the first half of the seventies. As surpluses turned to shortages, the value of a buffer stock of grain attracted increasing attention in both international and domestic policy forums. From an international perspective, the idea of a grain reserve is still pretty much just a concept. Most major nations have endorsed the idea but they differ on the size, funding, and management of an international reserve.

On the domestic side, the concept of a grain reserve has been brought to fruition with the rebuilding of stocks and the enactment of the Food and Agricultural Act of 1977. That act marked the first in the long history of agricultural legislation to mandate the accumulation of a buffer stock of grain. It authorized a domestic grain reserve that shifts the emphasis from publicly held to privately held stocks. The act also encourages the formulation of an international Emergency Wheat Reserve that could be fully operational next year.

## Historical perspective

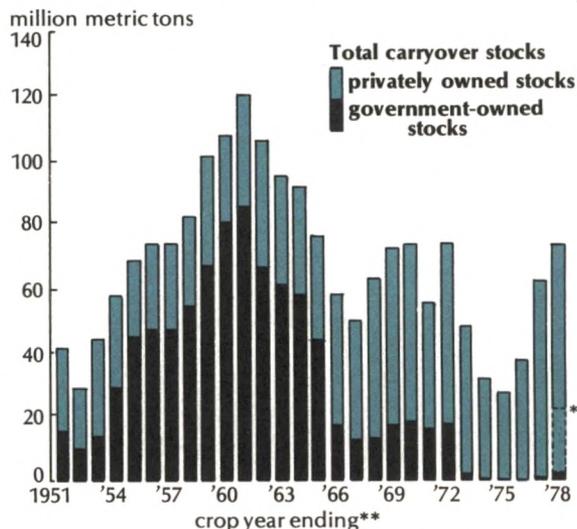
There is no exact definition of buffer stocks. Many consider the term synonymous with carryover stocks, meaning the grain on hand at the end of a crop marketing year. Others, however, view buffer stocks as that part of the carryover which exceeds the amount private interests willingly hold.

In the past, depending on the size of the carryover and the mechanics of government programs, the carryover was held entirely by private interests, such as farmers, processors, and manufacturers, or jointly with the government. The amount held by the government usually represented the widely fluctuating difference between total carryover and the more constant level held by private interests.

From 1950 to 1976, privately held carryover stocks varied from 19 million to 55 million metric tons and averaged 35 million.<sup>1</sup> This was a fairly narrow range compared with government-held stocks, which fluctuated from almost none to as much as 85 million metric tons and averaged 32 million.

<sup>1</sup>A metric ton weighs 2,204.6 pounds and is roughly equivalent to 36.7 bushels of wheat or 39.4 bushels of corn.

## The rebuilding in carryover grain stocks reflects a shift from publicly held to privately held stocks



\*Nearly 20 million metric tons of the privately held stocks were in the domestic grain reserve program.

\*\*Year-ending September 30 for corn and sorghum; May 31 for oats, barley, wheat, and rye, and July 31 for rice.

Stocks owned by the government were accumulated mostly through the Commodity Credit Corporation loan program. For many years, farmers have been able to place their grain under loan with the CCC. This has been one way for farmers to raise working capital without selling crops in markets glutted just after harvest.

The basic mechanics of CCC loan programs are the same today as three decades ago. A farmer that acquires a loan agrees to store the grain, holding it off the market until the loan is repaid or matures. The farmer can fulfill the loan obligation two ways. He can repay the loan plus interest anytime up to maturity and keep unencumbered control of the grain. Or, because there is no recourse to the borrower, he can default at maturity, keeping the proceeds of the loan and turning the grain over to the CCC. The choice he makes depends on the market price of grain and the loan rate (the amount per bushel extended by the CCC). If prices go enough above the loan rate to cover the interest charge, the farmer is inclined to sell the grain, paying off the loan and pocketing the difference. If prices do not rise that much, the tendency is to default, giving up control of the grain.

Loan defaults led to a huge accumulation of government stocks in the late fifties and early sixties. The loan rate for wheat ranged from \$1.82 to \$2.24 in the fifties. The range for corn, with only minor exceptions, was \$1.12 to \$1.62. Market prices nearly always averaged less than the loan rates, resulting in predictable defaulting on CCC loans. This, coupled with the absence of effective production controls, led to a record 85 million metric tons in government-owned grain stocks in 1961.

These policy shortcomings were corrected during the first half of the sixties. Grain production was pulled into better balance with utilization through programs that removed considerable acreage from production. The loan rate for wheat was scaled down to \$1.25 a bushel by the mid-sixties, and the rate for corn was lowered to \$1.05. These rates prevailed for nearly a decade.

These developments and an expansion in

exports of CCC stocks through the Food for Peace Program had reduced government stocks of grain to 44 million metric tons by 1965, down nearly a half from the 1961 peak. Thereafter, government stocks stabilized at around 16 million metric tons until shortages emerged and prices skyrocketed in 1973. Since CCC stocks could be sold in commercial markets when prices exceeded the loan rate by 15 percent, government stocks of grain were virtually exhausted by 1974.

### **Alternatives for the future**

The International Emergency Wheat Reserve is the least developed of the two new programs for accumulating a buffer stock of grain. The Administration announced the program under authorization of the 1977 act, and nominal amounts of grain have been accumulated for the program. Clarification of the size and the purpose of the international reserve, nevertheless, still awaits Congressional action. Since Congress spent considerable time on this program during the past session, final action is expected shortly after Congress reconvenes in January.

Stocks in the International Emergency Wheat Reserve will be owned by the government. The stocks can be acquired either through defaults on CCC loans or (more likely) through direct purchases in commercial markets. The Administration originally announced that the international reserve would contain up to 6 million metric tons of wheat. This was scaled down, however, to 3 million in recent Congressional debate.

The International Emergency Wheat Reserve is intended to provide a stockpile of grains that can be used to meet the government's international food and aid commitments. A tentative accord in the negotiations for an International Wheat Agreement provides that member countries will furnish 10 million metric tons of grain a year for aid and humanitarian purposes. If the agreement is eventually adopted, the international reserve will presumably provide a backstop for the U.S. part of the commitment.

The producer-held domestic grain

reserve program now serves as the major vehicle for accumulating buffer stocks of grain. It encompasses both a feed grain reserve (corn, sorghum, oats, and barley) and a wheat reserve. The Secretary of Agriculture can decide when the program will be open and which crops, by year of harvest, are eligible for entry. When open, the program is available to grain producers complying with the voluntary requirements (such as production controls) that determine eligibility for all farm program benefits.

The reserve operates as an extended CCC loan program. While in the reserve, a farmer keeps the proceeds of the original CCC loan and, subject only to the reserve's tighter marketing restrictions, ownership of the grain. Participants agree to keep their crop off the market for three years or until market prices go above designated *trigger levels*. Penalties discourage early withdrawals from the program.

Several features of the domestic reserve program encourage participation, provided prices stay below the trigger levels. One is the government payment to participants for storing grain. Current regulations call for an annual "up front" storage payment of 25 cents a bushel (19 cents for oats). This is roughly comparable to commercial storage rates. In addition, interest charges on the CCC loan are terminated after the grain has been in the reserve a year. Still another inducement for participation is a companion program for lending farmers enough to build or repair facilities for storing two years' worth of grain production. Because the loans are fully amortized over eight years, reserve storage payments are typically enough to meet the annual payment on the storage facility loan.

Flows in and out of the domestic grain reserve are determined by the relationship between grain prices at the farm level and the trigger prices. Prices lower than the trigger encourage entry into the reserve because the storage payment offsets the cost of holding the grain while the farmer waits for a possible price rise. Alternatively, grain flows out of the reserve when market prices exceed the trigger.

Trigger prices are implemented at two tiers. The lower tier (called the release price) is the price at which farmers can begin voluntarily repaying loans and leave the program without penalty. The upper tier (known as the call price) is the price at which farmers would be required to repay their loans.

Activation of either trigger does not require a farmer to sell the grain. Once the loan is repaid, whether payment is voluntary or mandatory, the farmer is free to sell as he pleases. Storage payments end, however, when market prices go above the release price for more than a month. If prices later fall back below the release price, storage payments are resumed for participants still in the program.

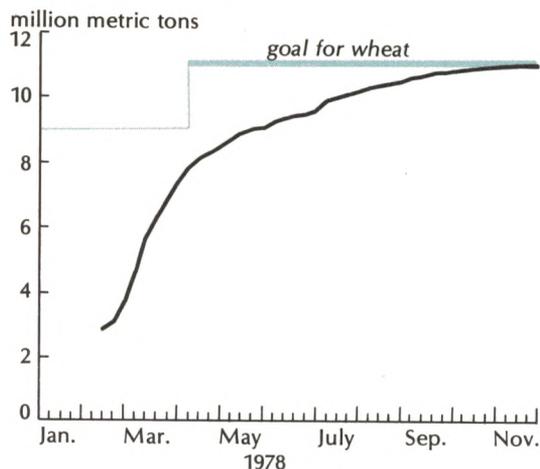
Trigger prices are tied to the prevailing loan support rates. Under current regulations, the release price of corn is set 25 percent higher than the loan rate, and the call price is set 40 percent higher. For wheat, the release price is 40 percent higher than the loan rate and the call price is 75 percent higher.

The size of the producer-held grain reserve is left largely to the discretion of the Secretary of Agriculture. The Food and Agricultural Act of 1977 calls for a wheat reserve of 8 million to 19 million metric tons but puts no limit on the size of the feed grain reserve. Initially, the secretary proposed a 9 million metric ton goal for the wheat reserve. Later the goal was raised to 11 million tons. The Administration goal for the feed grain reserve is 17 million to 19 million metric tons.

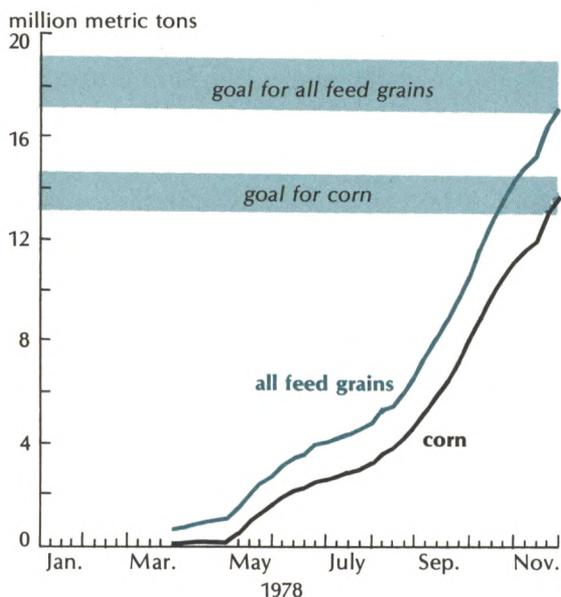
By late November, 28 million metric tons of grain had entered the reserve. The goal of 11 million metric tons for the wheat reserve had been reached, and further expansion of the reserve is not expected. The reserve is not open for the 1978 wheat crop, and almost all the 1977 wheat still under CCC loan has already entered the reserve.

Although the feed grain reserve has reached the minimal goal of 17 million metric tons, there may be some additional enrollment. The feed grain reserve was briefly opened to direct entries of 1978 crop corn, but that option was terminated on November

## Enrollment in the wheat reserve reached the Administration's goal in October . . .



## . . . and the goal for the feed grain reserve was achieved in November



30. However, CCC loans on some 200 million bushels of 1977 crop corn not yet in the reserve will soon mature, forcing farmers to repay, default, or extend the loans by entering the reserve. As a result, the feed grain reserve could surpass the 19 million ton mark.

## Implications

There are a number of likely effects of the new reserve programs. For one, government costs could be substantial. Under current regulations, for instance, the Administration's goal of a 28 million to 30 million metric ton domestic reserve translates into an annual government expenditure of roughly \$275 million in storage payments alone. And based on current loan rates, the waiver of interest charges after the grain has been in the reserve for a year would add another \$150 million in net annual government costs. Accumulating a 3 million metric ton international wheat reserve, if approved by Congress, might require \$300 million in government outlays, not counting storage charges.

For another, the domestic reserve program also encourages expansion of on-farm storage facilities, which most studies show is less economical than commercial storage. Although still sketchy, data clearly show this and companion programs as having their effects. In fiscal 1978, the Farm Storage Facility Loan Program alone helped finance over 750 million bushels in new on-farm storage, equivalent to a third of all the storage financed in the previous 28-year history of the program.

The expansion in on-farm storage will give farmers more flexibility in marketing their crops and more control over market prices. That was clear this fall, when increased storage stiffened farmers' reluctance to sell grain and contributed to unexpected strength in prices during the harvest season.

The new reserve programs are designed partly to constrain the volatility in grain prices. The constraints are tied to loan rates and trigger prices. When enough grain is eligible for loan, the loan rate amounts to a floor under grain prices. Likewise, buffer stocks that are isolated from free market supplies place a ceiling—at least temporarily—on prices at the point where the stock can re-enter the market.

If storage facilities are adequate and the buffer stock is large enough to offset a shortage in free market supplies, these constraints

will be effective in guarding against extreme swings in grain prices. But compared with former programs that accumulated large government stocks, the new domestic reserve program incorporates a wider margin between the upper and lower price constraints. And within this wider margin, prices are apt to be more volatile than under previous programs.

In the past, the CCC could usually sell grain when the market price rose above the loan rate by 15 percent, plus carrying charges. The margin was sometimes as narrow as 5 percent. By contrast, the release prices of the new domestic reserve program will widen the margin to at least 25 percent for corn and 40 percent for wheat. The margins could go as high as 40 percent for corn and 75 percent for wheat if farmers did not leave the reserve until they were forced out when call prices were reached.

Prices are more volatile, within the constraints, simply because of the wider margins in the new program. But other factors will also contribute to price volatility. To the extent that the expansion in on-farm storage gives farmers more control over free market supplies, prices are apt to fluctuate more to accommodate a wider range of price objectives. In addition, there is more uncertainty under the new program, both as to whether the domestic reserve will be open and to what extent farmers will participate. And since farmers will own the buffer stock, the problem of concessional government sales undermining commercial foreign demand for grain is not as likely to arise as under past programs.

### **Concluding comments**

Despite the shift in emphasis from residually acquired government stocks to government-encouraged private stocks, the Secretary of Agriculture has considerable flexibility in the management of the domestic reserve. Maybe most important of all, he can change the goal for the size of the reserve, subject only to the statutory limits of 8 million to 19 million metric tons placed on the wheat

reserve. Beyond this, he can change a number of variables that encourage or discourage participation in the reserve.

He can decide which crops, by year of harvest, are eligible for the reserve, and he can terminate eligibility at any time. He can raise or lower storage payments and waive or impose interest charges on loans covering grain in the reserve. He can extend the time the grain has to be held in the reserve up to five years. He can change loan rates, automatically setting new trigger prices, or he can change the formula that ties trigger prices to loan rates. Indirectly, the Secretary of Agriculture can change the size of the reserve through his choice of the variables associated with basic farm programs, including the loan rates, potential deficiency payment rates, and acreage set-aside requirements.

These flexibilities are important for several reasons. The overlapping variables between the domestic reserve program and the basic farm programs, for instance, could make the two hard to manage. Meeting a particular reserve goal will require careful coordination in implementing the farm programs. Alternatively, changing the variables of the farm programs to achieve a particular level of production could effect the intended scope and function of the reserve program.

The flexibilities are also important because they are broad enough to accommodate widely differing views on the best size for a grain reserve. It is conceivable, though not likely, that the domestic reserve could result in the accumulation of a buffer stock as large as the stock the government held in the early sixties. Or, the reserve could be squeezed down to an almost inconsequential level.

The new grain reserve programs have two main objectives. One is to constrain wide swings in grain prices by absorbing market supplies during times of surplus and supplementing market supplies during times of shortages. The other is to provide a buffer stock that will ease the effects of grain shortages on domestic consumers and livestock producers, foreign trading partners, and recipients of foreign aid.

These objectives are broad, with no

gauge for measuring success or failure. There is little doubt that the programs will contribute to the achievement of these objectives. Over the long run, however, the programs will be judged by the relationship between the size of the reserve, the stocks that would have been held without formal government programs, and the prevailing production/utilization balance of grains, at home and abroad.

Any judgment of success or failure at this point would be premature. As already pointed out, the size of the reserve can be influenced by political considerations. Even greater uncertainties—such as weather,

government policy, and technological developments—will also bear on the future balance between production of grains and their utilization.

Nevertheless, if buffer stocks build up to the size of those the government held in the early sixties, the new programs could be as costly and as hard to manage as the old ones. Alternatively, current buffer stocks would be virtually ineffective in offsetting chronic production shortfalls of the magnitude witnessed from 1972 to 1975. In the case of either extreme, history might eventually record that the new programs were only cosmetic changes from the old programs.

### New Film Available

A new film, "The Fed . . . Our Central Bank," has been produced in order to acquaint general audiences with the purpose and functions of the Federal Reserve System. Banks, high schools, colleges, and other interested groups can obtain the up-to-date 20-minute, 16 mm color film by contacting the Federal Reserve Bank serving their area. The area served by the Federal Reserve Bank of Chicago is indicated by the shaded area on the accompanying map.

Groups in Iowa and the Seventh District portions of Illinois, Indiana, or Wisconsin should contact:

Public Information Center  
Federal Reserve Bank of Chicago  
230 South LaSalle Street  
Chicago, Illinois 60604  
(312) 322-5112

Those in the lower peninsula of Michigan should contact:

Public Information Department  
Detroit Branch, Federal Reserve Bank  
of Chicago  
160 West Fort Street  
Detroit, Michigan 48231  
(312) 961-6880, ext. 427

These offices also welcome inquiries from Seventh District residents as to other available films and educational materials. Note that when requesting film bookings, it is best to make reservations at least two months ahead and to specify alternate showing dates.



# Some insights on member bank borrowing

Elijah Brewer

The amount of member bank borrowings at the Federal Reserve banks has averaged about \$1.2 billion for the past six months, ranging between \$500 million and \$1.7 billion on a weekly average basis. This compares with the less than \$100 million level that prevailed between late 1975 and early 1977.

Because member bank borrowings are usually higher in times of monetary restraint, concern occasionally arises that the *discount window* amounts to a leak in the Federal Reserve's control over commercial bank reserves and money.

This article focuses on the major elements affecting the volume of borrowings, both over the interest rate cycle and in the short run. It also explains why borrowing is not a significant obstacle to the achievement of policy goals.

Under current Federal Reserve procedures and regulations, three factors influence the volume of borrowings:

- The cost of borrowing from the Federal Reserve (the discount rate) relative to the cost of short-term funds from other sources.

- The volume of funds the Federal Reserve makes available to the banking system through open market operations relative to the total amount of required reserves.

- Federal Reserve administrative policy regarding the extension of credit to member banks.

## Providing for bank reserves

The Federal Reserve System provides aggregate reserves to the commercial banking system through both open market

operations and loans to individual member banks.<sup>1</sup> While the former are undertaken at the initiative of the System, the latter are at the initiative of the member banks.

There is an incentive for banks to borrow when the discount rate is below the cost of buying funds in the federal funds market—a major avenue through which reserves supplied by open market operations are distributed among banks.<sup>2</sup> Although some borrowing is clearly related to the size of this rate incentive, the very process of policy implementation under current regulations virtually ensures that borrowing will increase when the fed funds rate rises. This would be true even if the discount rate were tied to the fed funds rate so that a rate incentive could not develop.

Because of the way the discount window is administered, borrowed reserves are temporary and self-constraining. Not only are

---

<sup>1</sup>There are also other factors that cause changes in the reserves of the banking system. The three principal factors are (1) changes in Federal Reserve float; (2) flows of currency between banks and the public; and (3) changes in Treasury balances at Federal Reserve banks. These outside factors, which often affect reserves by hundreds of millions of dollars in a single day, are offset or supplemented by open market operations in accordance with overall reserve needs.

<sup>2</sup>The interest rate on the bulk of member bank borrowing is the base rate applicable to loans secured by paper "eligible" for discount or purchase by the Reserve banks under the provisions of the Federal Reserve Act. This is generally referred to as the "discount rate" even though loans are not made on a discount basis. An additional one-half of 1 percent is required on loans secured by other collateral satisfactory to the lending Reserve bank. Since 1974, a special discount rate has been applied to member banks requiring exceptionally large loans extended over a prolonged period of time. This rate has typically been set at one to two percentage points above the basic rate.

they taken into account when the *Desk* (the securities department at the Federal Reserve Bank of New York) determines its operational strategy in conducting open market operations, but they reflect operational problems.

Member bank reserve accounts at Federal Reserve banks serve as working balances through which many transactions, such as check clearings, are channeled. Banks with a greater value of checks written on their deposits than the value of checks deposited with them pay the difference by drawing down their reserve accounts.

Normal deposit flows between the thousands of commercial banks in the United States result in significant shifts in the distribution of deposits among banks. Banks hold funds on deposit at Federal Reserve banks to cover these day-to-day shifts.

In addition, banks are required to hold on average for each weekly reporting period (Thursday through Wednesday), a proportion

of their deposits as reserves at the Federal Reserve banks. Because the amount of reserves required to be held in the current week is based on deposits two weeks earlier (*lagged reserve requirements*), every bank knows at the beginning of a statement week what its reserve balance will have to be on average for that week. Also, the Federal Reserve knows the aggregate of required reserves that all member banks will have to hold.

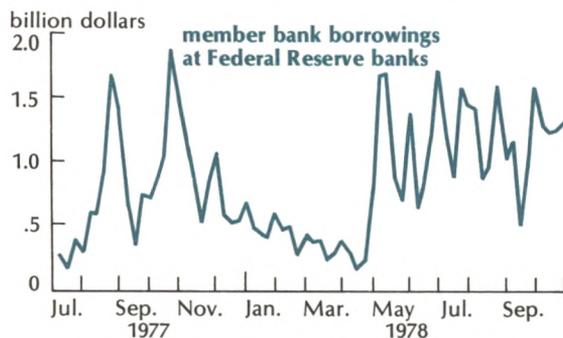
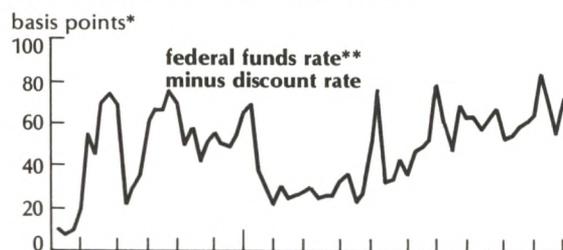
### Reserve availability—controlling the fed funds rate

In supplying reserves to the banking system to influence bank deposits and credit, the Federal Reserve pursues its monetary objectives through its influence on the price of reserves in the market—the fed funds rate. The policy decisions involve estimates of the level of this key money market rate that would be consistent with the rate of monetary expansion being sought. If deposits are growing faster than the Federal Reserve wants them to, the flow of reserves to the banking system is slowed through open market operations. The fed funds rate rises, discouraging banks from expanding deposits and their holdings of loans and investments.

Because of lagged reserve requirements, however, constraints on total reserves are limited in the short run. If the amount of reserves supplied to the banking system falls short of the amount needed, the banks in deficit bid up the fed funds rate. As the rate rises, some banks will respond to the rate differential by borrowing at the discount window. Regardless of the differential, however, enough has to be borrowed to cover the overall reserves shortage. If more reserves are supplied through open market operations than required, the fed funds rate falls relative to the discount rate and both the need and cost-savings incentive for banks to borrow are reduced.

By supplying through open market operations either more or less reserves than required to meet reserve needs overall, the monetary authorities can achieve the fed

### Member bank borrowings tend to vary with the spread between the federal funds rate and discount rate



\*One basis point is one-hundredth of one percent.  
\*\*Weekly averages of daily effective federal funds rate.

funds rate they believe is consistent with the rate of monetary expansion they seek. Member bank borrowings serve as a residual source of reserves that equates the supply of reserves overall to the amount of required reserves, which is fixed in advance.

Shortages of reserves created in the process of pushing the fed funds rate up force borrowings to rise as the funds rate rises. But the tighter conditions—with respect to both availability of reserves and their cost—also discourage credit and money growth in the weeks that follow.

### **Borrowing complements open market operations**

While the lagged reserves rule gives the Desk advance knowledge of the average amount of reserves that will have to be held each week, there is less certainty about the amount that will be supplied from outside sources and, therefore, the volume of transactions needed to cover required reserves at a particular level of monetary ease or restraint.

Changes in purely technical factors, moreover, can make the necessary offsets hard to achieve. These operational difficulties can happen because of shortages in collateral, delivery problems, and constraints on interest rates.

Movements in aggregate borrowing at the discount window give clues to whether non-borrowed reserves are sufficient, deficient, or excessive during the reserve settlement week. Member bank borrowings reflect not only the response of monetary authorities to the strength of credit demand and monetary growth but also to imbalances in the supply and demand for bank reserves brought on by day-to-day operational problems. These imbalances can result from errors in projecting reserves and from temporary inability to implement the actions intended.

In conducting operations to implement monetary policy, the Federal Reserve attempts to offset potential disturbances to the money market and changes in credit

availability caused by other factors that affect bank reserves. These include changes in Federal Reserve float, currency in the hands of the public, and especially shifts of funds out of private deposits into Treasury balances at Federal Reserve banks.

Such changes are estimated in advance, but the estimates are subject to error. The most likely amount of member bank borrowing is also estimated on the basis of recent experience and the spread between the fed funds rate and the discount rate. Based on the net effect of all these elements, projections are made of the amount of reserves that will be available during the period and the probable need to add or drain reserves so that the total supply equates to the total required, allowing for some minimal amount of excess reserves.

To the extent open market operations fail to compensate for a net reserve drain from other elements affecting reserves during the settlement week, member banks in the aggregate will have to borrow from Federal Reserve banks to cover the reserve deficiency. Such borrowing will be necessary by the end of the settlement week, regardless of the reason for the deficiency—whether it is an unexpected increase in currency in the hands of the public, a sharper decline in float than had been expected, or a delay in the cashing of Treasury checks.

The only question is *who* will do the borrowing. As in a game of musical chairs, the net deficiency nationwide will impact on some individual bankers when the settlement period ends.

The uncertainties banks face also affect their borrowing. When normal deposit patterns are expected to change or reserves are expected to be less available, some banks borrow in anticipation of the change in their needs. A bank may borrow over a long holiday weekend, for example, to make sure reserve needs are covered. The Federal Reserve's discount facility, therefore, is an important mechanism for meeting the needs of bank liquidity arising from uncertainties about deposits. Such uncertainties are naturally greater in periods of monetary

restraint. To the extent that such borrowing overcompensates for actual shortages in availability, the Federal Reserve may have to take offsetting open market action to absorb reserves.

Even when the Desk's estimates of reserve needs nationwide are reasonably accurate, implementation of monetary policy is not simple. The Federal Reserve controls the supply of reserves over the long run mainly through the outright purchase and sale of government securities. An outright purchase of securities permanently provides reserves. A sale permanently reduces reserves. But the Federal Reserve also has to provide or absorb reserves for short periods, often just a day or so within the reserve settlement week. Repurchase agreement transactions (RPs) with government securities dealers are particularly useful in providing reserves to offset temporary reserve drains resulting from factors other than Desk operations. Matched sale-purchase transactions in government securities can be used to withdraw reserves on a temporary basis.

RPs involve the purchase of government securities by the Federal Reserve and commitments on the part of dealers to repurchase the securities at a specified date and price. The Federal Reserve pays for the securities by crediting the reserve accounts of the dealers' clearing banks, which receive an equal increase in customer deposits. Such transactions are effectively short-term loans by the Federal Reserve to the dealers, collateralized by government securities.

Conversely, if the Federal Reserve is withdrawing reserves from the banking system, it enters into matched sale-purchase agreements with securities dealers. These contracts involve the sale of blocks of securities to dealers for immediate delivery with a simultaneous purchase for delivery at a specified later date. The securities sold by the Federal Reserve are paid for by debits to the reserve balances of the dealers' banks, with the result that bank reserves decline.

The ability to provide reserves through open market operations depends, however, on the ability of government securities

dealers to pledge collateral. Collateral is no problem when reserves are being withdrawn. But the success of the Federal Reserve in negotiating enough repurchase agreements to achieve reserve objectives depends on the ability of securities dealers to draw collateral from their customer networks.

When interest rates are rising, dealers tend to keep their inventories low and collateral is not as readily available as when interest rates are declining. This makes a large open market operation difficult. At other times, when dealers have substantial inventories of government securities, it is fairly easy to inject a large volume of reserves into the banking system as needed to meet predetermined reserve requirements.

In weeks when the Federal Reserve is not successful in providing needed reserves through open market operations, loans to member banks rise. Such increases can be quite sharp, but they are usually only temporary. In the interim, of course, the fed funds rate also tends to rise.

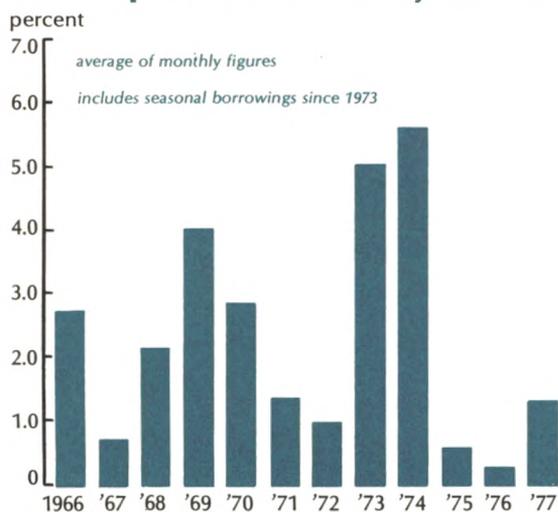
### **Constraints through window administration**

Borrowed reserves, even in times of tight money, are only a small part of total bank reserves. Federal Reserve policy regarding loans to individual banks is an important constraint on expansion in borrowing. While this policy is applied consistently, whether money is tight or easy, its impact is felt mainly during periods of restraint, when member banks need to borrow.

If the discount window actually represented an open line of credit to member banks, the difference between the fed funds rate and discount rate would be much more important in determining the level of borrowing. The privilege of borrowing, defined by Federal Reserve Regulation A, is not freely available to member banks on a continuing basis.

Borrowing by member banks is intended to cover unusual short-term needs. Administration of the discount window imposes an implicit cost in the form of surveillance of

## Borrowed reserves account for a small proportion of total reserves, even in periods of monetary restraint



member banks that use the window for extended periods. Because borrowings today tend to reduce the willingness of the Federal Reserve to accommodate future borrowings, banks tend to use the window sparingly, reserving their access for times of urgent need.

Banks borrow only to cover reserve deficiencies during the reserve settlement week. They do not borrow to obtain excess reserves. As long as a bank's performance shows its intentions to operate within the limits of its own resources, it can usually arrange for credit to meet its needs. A bank can use the discount window, for example, for temporary aid in working out portfolio adjustments to meet unexpectedly strong local credit demands.

Continuous borrowing at the window is considered inappropriate, for whatever purpose. Continuous borrowing suggests the bank is using Federal Reserve funds to supplement its capital resources. It also indicates the bank has basic difficulties with its reserve position, which ought to be corrected through portfolio adjustments. Federal Reserve surveillance, including frequent contact with borrowers, tends to discourage extended use of the discount window, con-

straining the growth in total borrowings.

An exception to the rule is the *seasonal borrowing privilege*, created in 1973 through revision of Regulation A. The authority for Federal Reserve banks to accommodate small banks in covering shortfalls in deposits relative to loans was intended to assist banks, especially those serving agricultural or resort areas, to meet the credit needs of their communities. While credit can be arranged for several months under this program, the total outstanding has usually been less than \$200 million. The desk managing open market operations knows the amount in advance.

### Large banks dominate profile

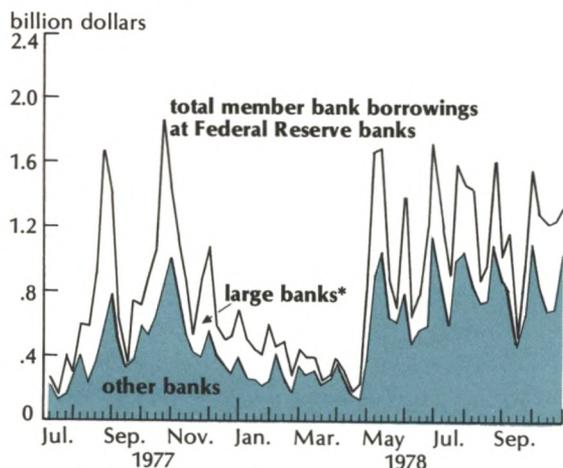
In periods of monetary ease, borrowing tends to bounce along at very low levels. With open market operations taking care of the supply of reserves, member bank use of the window results mainly from frictional problems that distort the distribution of reserves to small banks.

When the economy is sluggish, the Federal Reserve, in freely accommodating a fairly modest rate of growth in bank credit and deposits, supplies reserves faster than they are being absorbed by deposit growth. These are conditions associated with a low fed funds rate and a low volume of member bank borrowing at the discount window.

The fed funds rate was consistently below the discount rate in 1976 and early 1977 and, although occasional bulges reflected problems at the end of settlement weeks, member bank borrowing was minimal. The volume of borrowings began increasing substantially about mid-1977, however, as did the volatility.

With credit demands accelerating and deposits growing faster than desired under monetary policy objectives, the Federal Reserve ceased accommodating all the associated reserve demands through open market operations. Demand for reserves rose faster than the supply, and money market interest rates rose. The fed funds rate has been persistently above the basic discount rate since April 1977, although progressive in-

## Peak demand for credit at the discount window reflects residual pressures on large banks



\*Banks with weekly average net demand deposits (gross demand deposits minus cash items in process of collection and demand balances due from domestic banks) greater than \$400 million.

creases in the latter have kept the margin fairly narrow.

In times of monetary restraint, member banks of all sizes come to the discount window in increasing numbers and with increasing frequency, especially when the discount rate lags the rise in money market interest rates. Even then, however, the number of borrowers is a small proportion of member banks. Less than 10 percent of member banks borrowed at the window in any single week in the second quarter of 1978, and probably no more than 25 percent borrowed at any time during that quarter.

Small banks step up their use of the discount window as their deposit growth fails to keep up with loan demands. This is because many small banks do not have access to money market sources of funds. Peak

demands for Federal Reserve loans reflect the convergence of residual pressures on the large banks in major cities. There are comparatively few large banks and they do not borrow as often as the small borrowers. When they do borrow, however, a large amount of credit often is involved. The sharp short-run fluctuations in total member bank borrowings reflect the intermittent borrowings of large banks, some of which have required reserves of more than a half billion dollars.

It is on these large banks that the net pressures in the money market converge at the end of the reserve settlement week when there is a shortfall in the overall supply of reserves below the required level. This is partly because of the role these banks play in accommodating the needs of smaller correspondent banks.

Borrowing by large banks tends to be concentrated on Wednesdays and they rarely borrow for more than a day at a time. The average daily volume of member bank borrowing in 1977 was \$454 million, while the average for Wednesdays only was \$737 million, including some Wednesdays at more than \$2 billion.

The sharp but irregular Wednesday spurts in borrowings clearly reflect shortages in the aggregate supply of reserves relative to required reserve levels, whether the shortages were the result of policy moves or operational problems.

The pattern of member bank borrowing at Federal Reserve banks suggests strongly that the large commercial banks come to the window, not because of a rate differential, but mainly because reserves are not available in the money market. Any benefits they receive from a favorable discount rate are largely fortuitous.

# Automatic transfers: Evolution of the service and impact on money

*Randall C. Merris*

Commercial banks began offering automatic transfers from consumer savings to checking accounts November 1. With transfers made automatically through prior arrangements with their banks, consumers can keep more of their bank balances in interest-bearing savings accounts. Automatic transfers also are intended to reduce the volume of checks returned for insufficient funds—a costly inconvenience for everybody concerned. They are also expected to make it easier for consumers to meet the minimum balance requirements of their checking agreements.

The authorization extends only to consumer accounts. Corporations, partnerships, and other organizations, including units of government, are excluded from use of the service under plans approved last May by the Federal Reserve and the Federal Deposit Insurance Corporation. A majority of mutual savings banks can also offer automatic transfers.

Voluntary for both banks and consumers, automatic transfers can be made only on written authorization of the customer. The authorization must be given when the customer signs up for the transfer program. Arrangements can be made for banks to transfer funds automatically from interest-bearing accounts at thrift institutions, such as savings and loan associations. In that case, all three parties, of course, have to agree to the transfers in advance.

Although ordinarily waived, banks have the right to require 30 days' notice for withdrawals from savings accounts. Regulations governing automatic transfers require that banks prominently disclose the information that they reserve this right for automatic transfer accounts, just like any other savings plans.

Banks must also keep monthly records on the dollar volumes of savings subject to automatic transfer, the number and volume of transfers, and any service charges or interest forfeitures that result from transfers.

As with other innovations in banking, the advent of automatic transfers has created uncertainties, for both banks and the monetary authorities, about the pricing and packaging patterns that will emerge. There are also uncertainties about the effects of this new service on the money supply and the conduct of monetary policy.

## **Impact on money**

With consumers able to keep more of their bank balances in savings accounts, there will be a tendency for automatic transfers to reduce the money supply, as conventionally defined. The shift, therefore, has implications for monetary policy.

The money supply, defined most commonly as currency plus demand deposits held by the public, excludes savings deposits. This definition, called M1, is one of the measures of the money supply the Federal Reserve uses in conducting monetary policy. Money supply figures based on this definition will reflect any reductions in consumer checking balances resulting from the introduction of the automatic transfer service. And there will be no indication of the offsetting increase in savings deposits.

Although the Federal Reserve does not control M1 directly or completely, it sets target ranges for growth of M1. And efforts are made to meet the M1 targets through policy actions that directly affect the reserve holdings of member banks and indirectly influencing all financial markets. To gauge the

effectiveness of monetary policy, the Federal Reserve monitors movements in M1 along with other changes in economic data.

As automatic transfers allow consumers to transact the same volume of business with smaller balances in their checking accounts, the income velocity of M1 can be expected to rise. This velocity, called  $V1$ , is GNP divided by M1. Because both GNP and M1 are expressed in dollars,  $V1$  is a pure number rather than a dollar or percentage figure.

Although the income velocity of M1 tends to vary with economic conditions, rising with expansions and falling with contractions, the trend has been essentially upward since the Second World War. Calculated from seasonally adjusted data,  $V1$  nearly tripled in just over three decades, rising from 2.0 in early 1947 to 5.9 in early 1978. Reflected in this trend is better economizing on M1 holdings as interest rates have risen and improvements in the techniques of money management that have opened up for both consumers and businesses.

Automatic transfers are just another in a series of innovations that, like bank credit cards, have allowed consumers to make more effective use of their money and, like savings certificates, have provided attractive alternatives to holding money.

Consumers held almost \$93 billion in demand deposits last June.<sup>1</sup> That was over a third of the demand deposits counted in M1. It was over a fourth of the \$352.8 billion seasonally adjusted M1 total.

Consumer demand deposits at weekly reporting banks—which include the large banks that are most likely to introduce automatic transfers—totaled almost \$37 billion. These deposits accounted for close to 15 percent of the demand deposit component of M1 and about 10 percent of total M1.

If reductions in consumer demand deposits even approach the amounts that could eventually be shifted into savings accounts, the increase in the income velocity of M1 could be substantial. How much  $V1$  in-

creases, and how soon, depends on the number of banks that introduced automatic transfers and the success of the pricing and promotion schemes they employ.

### **Pricing and packaging**

Some of the most important features of automatic transfer programs are still being determined—the types of savings plans being offered, transfer charges and account maintenance fees, minimum balance requirements, minimum transfer sizes, and the provisioning of complementary and competing bank services.

*Savings plans.* Most banks offering automatic transfer programs are marketing the new service through separate savings/checking plans set up as automatic transfer accounts. A few banks, however, have linked automatic transfers to regular checking and savings accounts, provided customers want the service and are willing to pay the fees and meet the minimum balance requirements. This second strategy possibly could lead to faster customer acceptance of automatic transfers. If it becomes a popular strategy, it could speed the shift in deposit balances, tending to reduce M1.

The plans banks have announced show they favor service charges and balance requirements for pricing automatic transfers, rather than interest forfeitures and reductions in the interest rates paid on savings deposits subject to automatic transfer.

Most banks offering automatic transfers have announced they will pay the highest interest rate legally allowed on bank savings—currently 5 percent a year. As with other savings accounts, however, banks have picked various means of compounding interest (continuous compounding, daily interest, and less frequent compounding) and various rules for when deposited funds begin to earn interest.

*Minimum balance requirements.* Banks have announced various minimum balance requirements, stating the requirements in terms of checking balances and savings balances, separate minimums for both types

---

<sup>1</sup>The consumer deposit figures are estimates of gross demand deposits. They are slightly larger than the adjusted demand deposits used in calculating M1.

of balances and minimums for the combined totals of both. Banks that previously used minimum checking balances as an implicit charge for handling checks seem in some cases to still be using this device, but combined now with a minimum savings balance that implicitly prices transfers.

Many banks are promoting zero-balance checking, while relying on explicit transfer charges, monthly maintenance fees, and minimum savings balances for reimbursement of their check-clearing and transfer costs. Some banks, especially the large ones, waive transfer fees and monthly charges when the savings balances are large enough. Where the exact amounts for cleared checks are transferred—rather than minimum dollar amounts—the zero-balance checking plans are practically the same as the NOW accounts available in New England (see box).

To the extent that minimum balances on checking accounts are used to cover the costs of automatic transfers, shifts from checking to savings balances are apt to be mitigated and the tendency to reduce M1 eased. Larger minimum balance requirements for savings accounts subject to automatic transfers, on the other hand, will tend to increase the shift from demand deposits to savings balances, reducing M1.

*Minimum transfer amounts.* Several banks have set minimums for the amounts that can be transferred. Most of these minimums are in the \$25 to \$100 range. For banks that want to develop broad markets for their automatic transfer programs, minimum amounts that can be transferred have to be low enough for a moderate-wage earner to deposit a weekly paycheck and make at least one transfer before the next payday and still not significantly lower the original savings balance. The range of minimums from \$25 to \$100 seems to suit this marketing purpose.

Because the minimum amount that can be transferred determines the amount that is apt to be put in a checking account at any one time, balances in consumer demand accounts can be expected to vary directly with minimum transfer amounts. For that reason, the prevalence of large-amount minimum

transfers would reduce the downward effect of automatic transfers on M1.

*Transfer fees and monthly charges.* Some banks are charging a fee for every automatic transfer of funds. Others are charging for every transfer over a certain number allowed free every month. Most of the charges that have been announced are from 10 to 50 cents per transfer. In a few cases, transfers are priced at a dollar or more. A few banks charge by the check, rather than the transfer.

Many banks levy monthly charges for maintaining accounts, either instead of per-transfer charges or in combination with them. In some cases, both the monthly charge and the transfer charge are waived if the savings balance is high enough—usually \$1000 to \$5000. Waiver of charges and the large minimum balance requirements indicate the banks are target marketing their transfer plans to savers with big balances and low activity in their accounts.

In terms of the price mechanism, monthly charges tend to reduce the number of consumers enrolling in automatic transfer plans. Per-transfer charges tend to reduce both the number of enrollees in the plans and the activity in their accounts. Either way, the higher the charge, the less the downward influence on demand deposits and, therefore, M1.

The per-transfer charges in many plans are probably high enough to bring a significant reduction in the activity in consumer checking accounts. Checking accounts free of service charges have led many consumers away from economizing on their check writing in the past decade. Transfer fees could bring a slight reversal in this trend.

*Other bank services.* Automatic transfers do not provide one service already offered under overdraft protection plans—the provision of automatic loans. Because of the credit these plans provide, some customers will still want overdraft protection. But, because of the comparatively high interest charges for overdraft loans (18 percent a year for credit card plans and often 15 to 18 percent for other plans) this service will provide only limited competition with automatic

transfers. Because of the convenience, bank customers will also still want preauthorized payment of their bills. This service, however, can be tied to automatic transfer plans.

The only banking service that will probably be replaced at most banks offering automatic transfers is telephone transfers from savings to checking accounts.

Many banks are evidently using the introduction of automatic transfers as a catalyst to the revision of their schedules for the pricing of other retail banking services. Several banks have taken the occasion to announce changes in their charges for regular checking accounts and requirements for minimum balances, as well as increases in charges for checks returned due to insufficient funds. Some banks are also taking a look at preauthorized bill payment and telephone transfer services for the first time, to be used either in conjunction with automatic transfers or as a substitute for them.

## Impact on monetary policy

Considerations of pricing and packaging create uncertainties about the extent of shifts that can be expected from checking to savings deposits. But while these uncertainties complicate the use of M1 targets in the conduct of monetary policy, two factors are working in favor of the monetary authorities.

One is that the shift will not come all at once. Automatic transfers are expected to bring only a gradual downward shift in the demand for M1 and, therefore, a fairly slow increase in the income velocity of M1. Many banks indicate they have no immediate plans for introducing automatic transfers. Many customers will not sign up at first. For many, automatic transfers are simply priced out of their reach for now. Also, some of the plans that have been announced require that customers still maintain some checking balances.

### Automatic transfers and NOW accounts compared

Automatic transfers from savings have been compared—too closely in some cases—with NOW accounts. NOW is an acronym for a check-type draft called a *negotiable order of withdrawal*. NOW accounts pay explicit interest and offer their owners the privilege of writing orders of withdrawal that, like checks, can be made payable to third parties.

Savings banks in Massachusetts and New Hampshire began offering NOW accounts in 1972. Under special authorization by Congress, these accounts are available today at savings banks, savings and loan associations, and commercial banks throughout New England. And despite approval of automatic transfers by the Federal Reserve and the FDIC, congressional authorization of NOW accounts has recently been extended to federally chartered banks and thrift institutions in New York State.

Although acceptance of NOW accounts was slow at first, even by some banks and thrift institutions, they have become widely used as a form of savings and payments in all six New England states. Over 70 percent of the commercial banks in New England were offering NOW accounts at the beginning of 1978. Altogether, that was 682,855 accounts worth \$1.8 billion. They earned over \$7.3 million in interest in December 1977. An average of 13 NOW drafts were written that month on each account.

Automatic transfers from savings can be viewed to some extent as a substitute for authorization of NOW accounts nationwide—an idea that was considered in 1976 and 1977. The two, however, are very different, and comparisons between NOW accounts in New England and automatic transfers should be drawn with caution.

The experiment in New England, where banks and thrift institutions offer NOW accounts on the same terms, differs sharply from the automatic transfer services that are becoming available at many of the nation's largest and most innovative banks, without the direct participation of savings and loan associations.

The experience in New England has been of some help to banks in providing an initial guide to pricing transfers and tailoring them to customer needs. But NOW accounts are imperfect as a guide to longer-range planning for automatic transfers, which will surely show their own patterns of consumer demand, account activity, and bank operating costs.

Experience with NOW accounts is apt to be of little use either in predicting how long it will take automatic transfers to become widely accepted as a banking service or in estimating initial and long-run deposit shifts from checking to savings balances.

As automatic transfer services become more widely available, the Federal Reserve will have already been monitoring its use, studying the effects on M1, and adjusting its M1 targets as needed.

The other is that M1 is not the only definition the Federal Reserve uses in making monetary policy. A more broadly defined monetary aggregate is M2, which includes the currency and demand deposits in M1 plus time and savings deposits at commercial banks, excluding large negotiable CDs (those of \$100,000 or more). This measure is not affected directly by shifts from consumer checking accounts to savings accounts. It includes both.

Although dollar-for-dollar shifts from checking to savings balances do not affect M2 directly, this measure is influenced indirectly by the declines in the average reserves member banks are required to hold against their deposits. Reserve requirements for banks belonging to the Federal Reserve System are stated in terms of non-interest-bearing reserves as a proportion of deposits of a particular type.

Requirements for demand deposits vary from 7 percent to 16.25 percent, graduated by the deposit holdings of the banks. Requirements for savings deposits are 3 percent, regardless of the dollar holdings of a particular bank.

Shifts into savings deposits reduce the average reserve requirement as a proportion of total deposits. Without offsetting action by the Federal Reserve, lowering the ratio of required reserves to deposits can lead to expansion of bank credit, and consequently, M2.

The introduction of automatic transfers is expected to take long enough that the Federal Reserve will not need to engage in sudden large-scale moves to absorb member bank reserves. Reserves released through growing acceptance of automatic transfers can be neutralized by the Federal Reserve through its day-to-day dealings in government securities.

Through open-market operations, the Fed can sell government securities, reducing

total reserves in the banking system. The volume of sales arising from the introduction of automatic transfers will probably be small, comparable certainly to the operations used in connection with earlier revisions in average reserve requirements and occasionally to offset Treasury financing activities.

A fall in average reserve requirements resulting from automatic transfers will be consistent with the secular decline in member bank reserve requirements since the Second World War. Having to hold reserves in the form of non-interest-earning assets is a burden on member banks that is not shared by the many state-chartered banks that have elected not to become members of the Federal Reserve System.

With no change in the current structure of reserve requirements, automatic transfers will reduce the implied costs of membership in the Federal Reserve through the reduction in average reserve requirements.

By making bank savings accounts more attractive, automatic transfers could bring savings flows that amount to more than mere shifts from checking balances. Not only will bank savings accounts be made more attractive compared with other interest-earning assets consumers may hold, but depositors may in some instances need to switch funds from other sources to meet the minimum balance requirements of automatic transfer plans. Unexpected changes in M2 arising from these shifts are not apt to be large.

Introduction of automatic transfers may also increase the general acceptance of M2 as a definition of money. By making bank savings deposits more readily available for consumer purchases and payments, automatic transfers can enhance inclusion of these deposits in the money supply. From the standpoint of policy, M2 will certainly be easier to follow during the transition than M1.

Crucial to policy makers, of course, are linkages between the money supply and economic activity. As always, the Federal Reserve will be watching both M1 and M2 and their relationships to movements in the real economy.

## ECONOMIC PERSPECTIVES Index for 1978

Agriculture and farm finance	Issue	Pages
Agriculture in the seventies— a decade of turbulence .....	September/October	3-11
The new grain reserve programs .....	November/December	10-15
<b>Banking, credit, and finance</b>		
Banking insights: Trends in capital at district banks: 1965-76 .....	March/April	7-9
Loan commitments and facility fees .....	March/April	14-21
Bank failures .....	March/April	22-31
Disintermediation again? .....	May/June	10-13
Prime rate update .....	May/June	14-16
Convenience and needs: a post-audit survey .....	May/June	20-23
New six-month money market certificates— explanations and implications .....	July/August	3-7
Competitive equality and Federal Reserve membership— The Board of Governors' proposal .....	July/August	8-13
Liquidity ratios weakened at district banks in 1977 .....	July/August	14-17
Multibank holding company expansion in Michigan .....	September/October	18-24
Some insights on member bank borrowing .....	November/December	16-21
Automatic transfers: Evolution of the service and impact on money .....	November/December	22-26
<b>Economic conditions</b>		
Review and outlook: 1977-78 .....	January/February	3-31
Business insights: Instalment credit— benefits and burdens .....	March/April	3-6
Indexation and inflation .....	May/June	3-9
Capital spending—the sluggish boom .....	November/December	3-9
<b>Government finance</b>		
Federal grants-in-aid—solvency for state and local governments .....	May/June	17-19
<b>International finance</b>		
What is happening to the U.S. dollar? .....	March/April	10-13
Canadian-U.S. auto pact—13 years after .....	July/August	18-23
Edge Act and agreement corporations: Mediums for international banking .....	September/October	25-31
<b>Money and money supply</b>		
Effects of seasonal adjustment on the money stock .....	September/October	12-17