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ECONOMIC

PERSPECTIVES

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a decade of turbulence

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on the money stock

Multibank holding company
expansion in Michigan

Edge act and agreement corporations:
mediums for international banking



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ECONOMIC PERSPECTIVES

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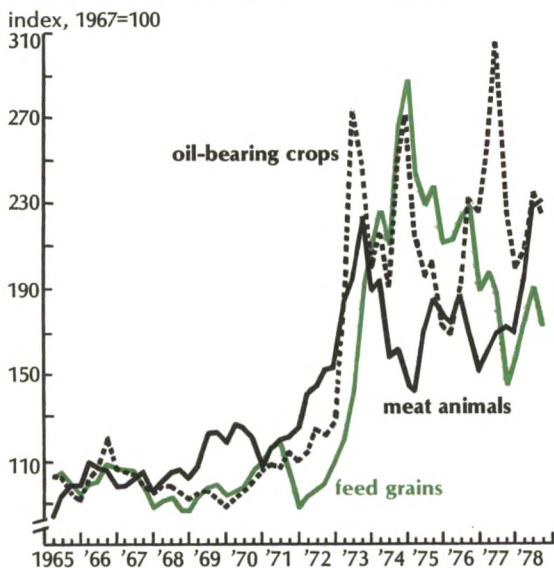
Agriculture in the seventies— a decade of turbulence

Don A. Langford

Historians may someday look back on the seventies as one of the most significant decades in the history of American agriculture. In many ways, the seventies have capsulized agriculture in this century, providing farmers some of their best times and some of their worst.

Some trends—like the declining number of farms, the shrinking amount of land in farms, the dwindling farm population, and the expanding average farm size—have continued. Others—such as rising production costs, increased use of debt financing, higher farm earnings from off the farm, the rising value of farm assets, and increasing proprietor equities—have continued at accelerated paces.

Prices received by farmers fluctuated widely in the 1970s



But not everything has been simply a matter of continuing trends. Perhaps more than for anything else, agriculture in the seventies will be remembered for its extreme swings. Cattle and hog cycles have been far more pronounced than in the past. Grain stocks have fluctuated from surplus to shortage and back to surplus. The long uptrend in values of farmland turned into a boom unparalleled in this century. Government payments to farmers have varied from a record high to a 20-year low. During a cycle of four short years, net farm income doubled, and then fell by a third.

Government policy

To a great extent, farm legislation in the seventies has followed a fairly natural progression from the sixties. Policies of the 1970s for supporting farm income, encouraging farm exports, and maintaining the viability of family farms have been carried out largely through such long-established measures as price supports, transfer payments, voluntary supply management, P.L. 480 programs, and loans from various government agencies. However, a basic difference has arisen from the boom and bust conditions in agriculture during the seventies. Administrations have been able to use the latitude allowed under legislation to greatly shift the emphasis and direction of farm programs.

Government involvement in agriculture was especially apparent early in the decade, with payments to farmers setting a new record in 1972. But crop shortfalls in many parts of the world between then and 1975 pushed grain prices to new highs.

The government's role in agriculture temporarily became less visible as high prices reduced the need for income support and as production controls were relaxed. Nearly 60 million acres previously held out of production through such programs as acreage set-aside, land diversion, and cropland adjustment were released for cultivation in the mid-seventies.

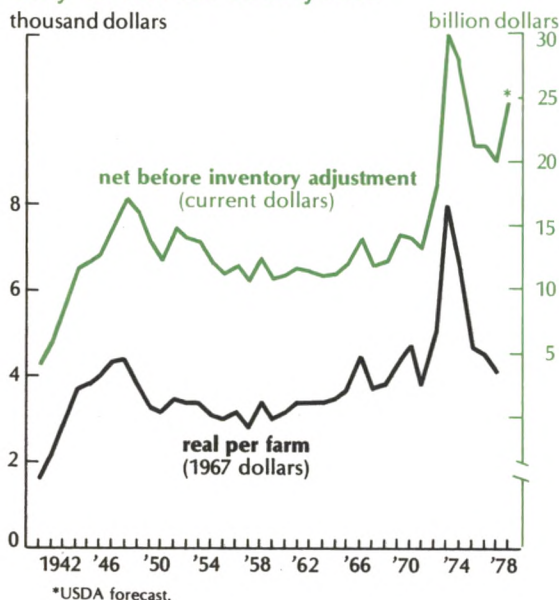
But as farmers planted fencerow-to-fencerow, grain stocks began to increase, boosted by good yields at home and bountiful harvests in other parts of the world. Farm income trended downward because of the erosion in grain prices and prolonged losses to cattlemen. This deterioration was highlighted last winter by demonstrations that focused attention on the problems of farmers and generated momentum for increased government support. From this background, the Food and Agricultural Act of 1977 and subsequent administrative actions have been characterized mostly by higher levels of farm income support, reintroduction of set-aside programs, and a new grain reserve program to manage the accumulation of large stocks.

Price controls, import quotas, embargoes on exports, and trade agreements were all

part of farm policy in the seventies. Embargoes on some agricultural commodities in 1973 and again in 1975 exemplified government efforts to ensure an adequate supply of food and feed would be available in domestic markets. Other government actions included the imposition of ceilings on red meat prices in 1973 and the relaxation at various times of restrictions on meat imports in an effort to stop the rise in retail meat prices.

Resumption of trade with communist countries, one of the key export developments in the seventies, led to several trade agreements. The three-year \$750 million grain agreement signed with the Soviet Union in 1972 was hailed as a boon to farmers because of the then burdensome stocks. But trade with communist countries has since fluctuated widely, sometimes compounding grain shortages. For that reason, subsequent trade agreements have been designed either to assure trading partners, such as Japan, that adequate supplies would be available from the United States or to stabilize patterns of future trade with communist countries. The five-year grain trade agreement with the Russians in 1975 was the most publicized of several agreements made with other countries to show a willingness to export farm products and at the same time bring enough stability to the pattern of foreign grain purchases to facilitate planning of farm policies based on production needs.

Farm income surged in 1973 only to fall for four years



Crop production

Several factors have influenced the fortunes of crop producers in the seventies—each to some extent unique. The arab oil embargo in 1973, which triggered the rise in prices of hydrocarbons, also contributed to shortages in fertilizer. And with prices for fertilizer sharply higher in 1974 and 1975, the long uptrend in fertilizer application rates was broken.

An unprecedented boom in farmland values also affected the fortunes of farmers, though with varying results. For farmers who had acquired their land in the past, the boom brought tremendous gains in net worth. But for operators that bought additional land or

rented much of their cropland, the boom resulted in considerably higher production costs. Higher land costs became a factor in the squeeze on cash flows that began in 1977 when mounting surpluses pushed crop prices sharply lower.

Changes in weather and fluctuations in world demand have also affected the well-being of crop producers. Long-range weather observers contend that weather patterns have shifted from the “abnormally good” conditions of the fifties and sixties to a “more normal” pattern of variability in the seventies. At any rate, the seventies have experienced wide swings in domestic and world crop production, largely because of weather conditions.

Foreign demand for grains and soybeans has risen to new highs in the seventies, largely as a result of the resumption of trade with communist countries and the decline in the dollar relative to the value of many currencies. Shipments of grain and soybeans surged to 85.6 million metric tons in the 1972/73 crop year. That was nearly 70 percent more than the average for the five previous crop marketing years. The volume, having continued to trend irregularly upward, is ex-

pected to exceed 100 million metric tons in the 1977/78 marketing year.

The greater volume of shipments has combined with generally higher prices to bring marked increases in the value of agricultural exports. Current estimates show farm exports approaching \$27 billion in fiscal 1978. That is more than a fourfold increase since 1969.

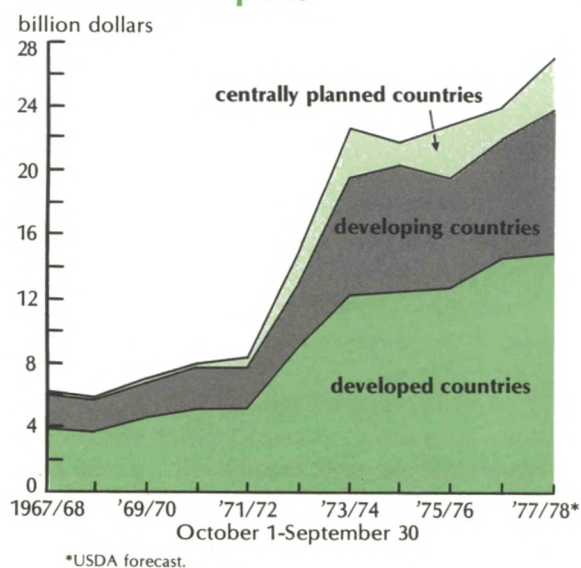
Producers began the decade under adverse conditions. Planting in 1970 was delayed by rain and followed by summer drought. Corn farmers had yields further reduced by southern corn leaf blight. Production of soybeans and grains (corn, sorghum, oats, barley, wheat, rye, and rice) fell 8 percent that year to 217 million metric tons, 3 percent less than the annual average of the second half of the sixties. Corn production fell 11 percent from the year before and was the smallest harvest since 1965.

With supplies short, farmers increased their plantings of soybeans and grains the next year and, with improved yields, crop production was boosted to a new high. Despite an increase in utilization, grain stocks at the end of the 1971/72 marketing year were again at the burdensome levels of the mid-sixties. On the other hand, soybean stocks tightened as utilization held at a relatively high level.

There were bumper grain and soybean harvests again in 1972, hinting that prices, for grains at least, would continue at support levels. Later in the year, however, the Soviet Union abandoned its longstanding practice of belt tightening when crops were short and turned to the United States to buy large amounts of grains and soybeans. Moreover, exports to traditional trading partners surged in response to the declining value of the dollar. As a result, grain exports jumped nearly two-thirds in the 1972/73 marketing year, and soybean exports increased 15 percent. Combined with a level of domestic utilization that still stands as a record, these developments brought a marked decline in ending stocks of grains and soybeans and triggered a rapid escalation in prices.

The 1973/74 crop marketing year was a near replay of the previous year. Boosted by a

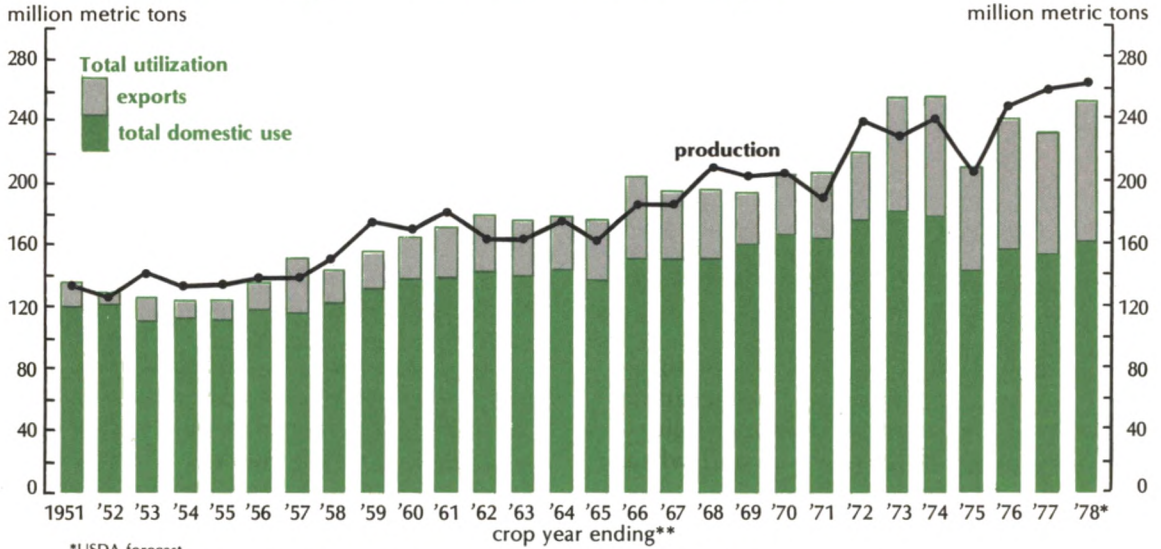
All types of economies contributed to boom in U.S. farm exports



marked increase in soybean production, the 1973 harvest was 6 percent larger than in 1972. But emerging concerns about the condition of the 1974 crop resulted in even stronger world demand for grains and soybeans.

Plantings of most crops were increased further in 1974 as the last vestiges of acreage production controls were relaxed. Production suffered, however, from rain-delayed plantings, a summer drought in the Corn Belt

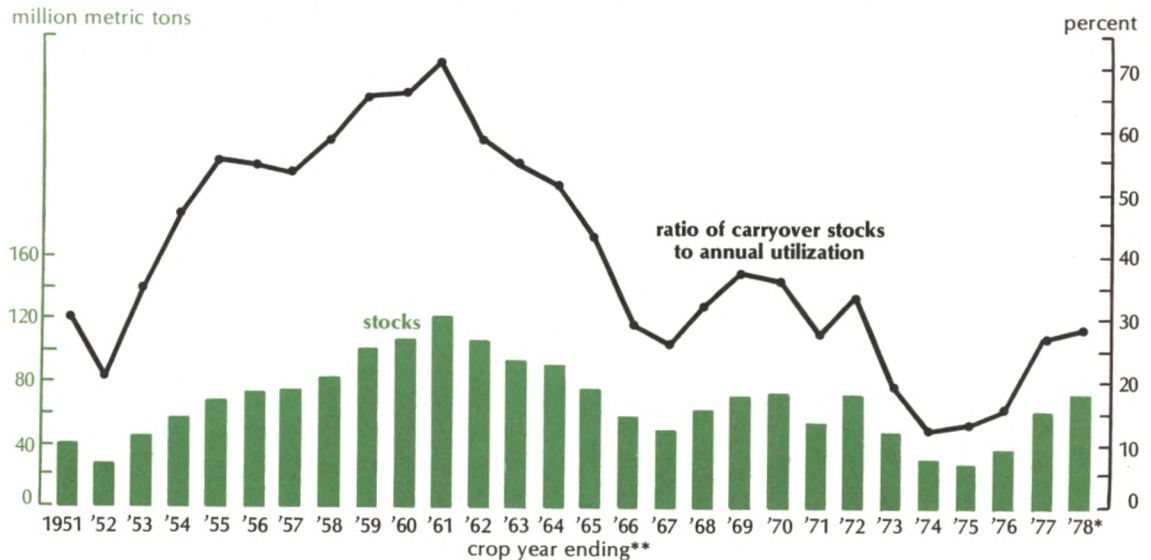
Imbalances between production and utilization of grains . . .



*USDA forecast.

**September 30 for corn and sorghum, May 31 for oats, barley, wheat and rye, and July 31 for rice.

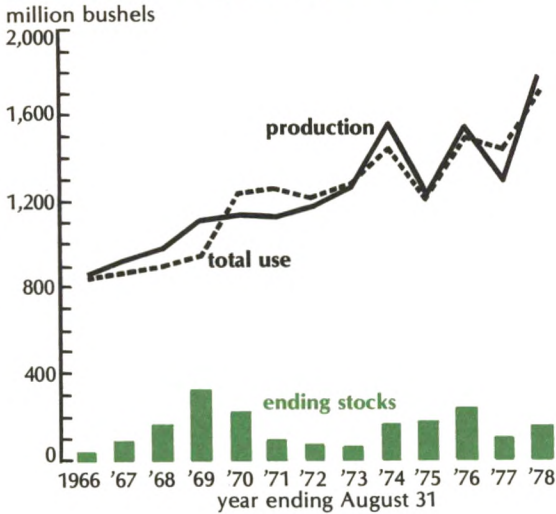
. . . led to precariously low carryover stocks in the mid-1970s



*USDA forecast.

**September 30 for corn and sorghum, May 31 for oats, barley, wheat and rye, and July 31 for rice.

Expanding utilization kept pace with increases in soybean production



and early frosts, all of which combined to cut average yields to a ten-year low. Per acre corn yields fell 21 percent from the year before. Soybean yields fell 16 percent, and wheat yields fell 14 percent.

The decline in crop production coupled with depleted carryover stocks cut grain and soybean supplies for the 1974/75 marketing year by 17 percent and mandated a major price rationing response. Much of the rationing was confined to domestic markets where it proved especially disruptive for livestock producers. Because of high feed costs, domestic utilization of grains in 1974/75 was reduced nearly a fifth, dropping to a ten-year low. By contrast, grain exports fell only an eighth.

Grain stocks at the end of the 1974/75 marketing year, at 27.6 million metric tons, were the lowest in more than 25 years. Ending grain stocks represented only 13 percent of that year's reduced utilization compared with an average of 46 percent during the fifties and sixties.

Even with lingering concerns over drought, every year since 1974 has set a new record for U.S. production of grains and soybeans. And even with another huge increase in exports in 1975/76—resulting mostly from the Soviet Union's crop disaster in

1975—grain production has continually exceeded utilization. The result has been a rise in grain stocks every year with attendant declines in season average grain prices. During the summer of 1977, grain prices averaged well below the cost of production, setting off farmer demonstrations that continued into early 1978.

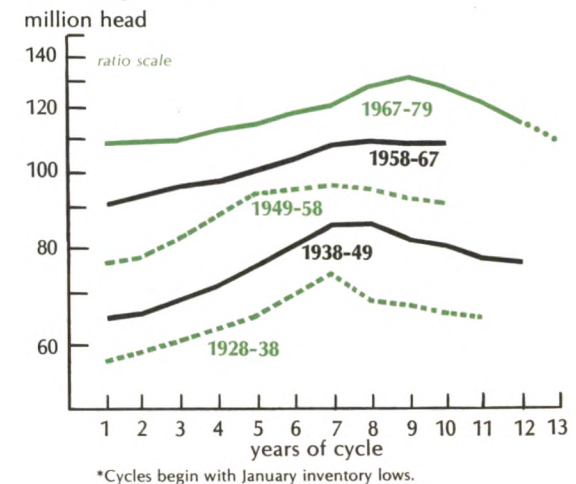
Relative to the variability in production and prices of grains in the seventies, soybeans have provided crop farmers a degree of comfort. Rising world demand for U.S. soybeans—fueled most recently by the drought-reduced production in Brazil—has kept soybean prices high, and highly volatile. For the past four years, soybean prices have averaged more than \$6 a bushel. That is twice the average for the four preceding years.

Livestock production

The seventies have recorded cattle and hog cycles that have been more pronounced than usual. Wide swings in crop prices, probably more than anything else, have contributed to marked fluctuations in livestock production—and in the welfare of producers.

But other contributing factors included the imposition of ceilings on red meat prices in 1973, unusually hard winters, heavy death losses, an influx of outside investors, a con-

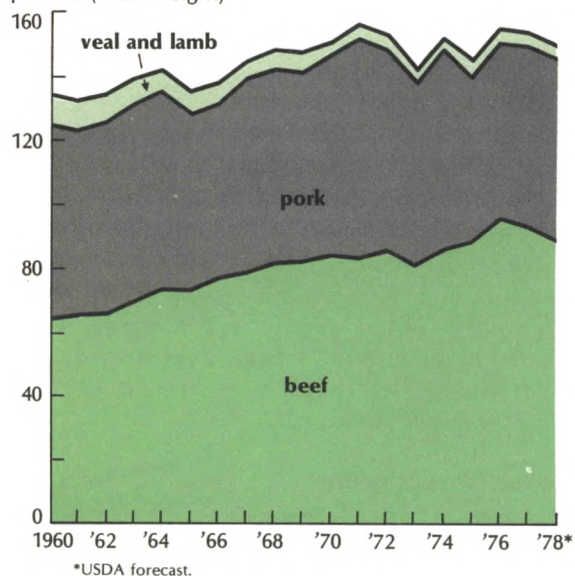
Downturn in this cattle cycle is the most pronounced since the Depression



*Cycles begin with January inventory lows.

Per capita red meat consumption averaged higher in the 1970s

pounds (retail weight)



sumer boycott, and relaxation of quotas on meat imports.

Meat production has trended upward in the seventies, despite wide swings in the production of both cattle and hogs. As one fell off, the other usually rose, leaving generally high levels of production overall. Consumption, meanwhile, has also trended upward. Only in 1973 and 1975 was per capita meat consumption less than before the start of the decade. By the end of the seventies, the uptrend will likely result in per capita consumption averaging over 8 percent higher than in the sixties.

Cattle production—Cattlemen are apt to remember the seventies as coming in three distinct stages. Demand for beef was strong in the beginning of the decade, bolstering cattle prices and encouraging producers to hold back heifers to build breeding herds. Feedlots expanded, in part because of tax incentives that many investors found appealing.

Early in 1973, while cattlemen still reveled in high profits, consumers began protesting against rising prices. A beef boycott was organized, and ceilings were imposed to curb further price increases. Despite ceilings at the

retail level, cattle prices continued to rise at the farm level—ironically, reaching their peak during a time of price controls. The resulting squeeze on margins caused many meat packers to close plants or curtail their operations.

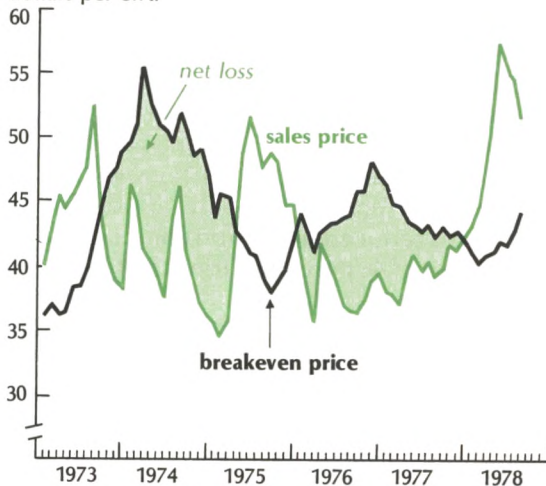
When the government announced the ceiling on beef prices would be extended for two months beyond the release of prices on other foods, consumers and producers alike moved in anticipation of further increases as soon as controls were removed. Cattle feeders tried to wait out the price freeze, holding fed cattle beyond the time when they were properly finished for market. Sales of home freezers picked up sharply as consumers stocked up on beef at controlled prices. For a while, reports of empty meat counters were common.

The second stage, from late 1973 through late 1977, was hard for cattlemen. When ceilings on beef prices were finally lifted, cattle prices actually fell. There were several reasons—the slaughter suddenly increased, providing an abundance of beef; cattle, being overweight, yielded meat that was excessively fat, and with consumers still eating stockpiled beef, demand was lackluster.

Feeders quickly felt the squeeze on profit margins. Ranchers and investors alike were

Cattle feeders had large losses in the mid-1970s

dollars per cwt.



SOURCE: Iowa State University.

caught holding high-priced feeder cattle just as grain prices escalated, raising costs of feeding. As feedlots curtailed operations to cut costs, the financial stress was extended to beef-cow operators, setting off the most pronounced liquidation of herds since the Depression.

Fed cattle slaughter fell to a nine-year low in 1975, down nearly a fourth from the peak three years before. Effects on beef supplies, however, were offset by the liquidation of herds. The high volume of slaughter of cows and nonfed steers and heifers provided fairly abundant supplies of beef through early 1978.

The return to profitability in cattle feeding this year marks the beginning of the decade's third stage for cattlemen. Comparatively cheap feed, sharply reduced cattle inventories, lack of large competing red meat supplies, and rising consumer incomes—all help improve the outlook for cattle producers in 1978 and beyond. Feedlot operators, again realizing profits, have bid up prices of feeder cattle. Fed cattle marketings are accounting for more of the commercial cattle slaughter, and retail beef prices have risen to record levels.

Hog production—Hog production rose sharply early in the decade, pushing slaughter in 1971 to a height that is still unsurpassed. Nearly 96 million hogs were slaughtered that year, 15 percent more than the annual average for the sixties and 9 percent more than the previous record slaughter in 1959.

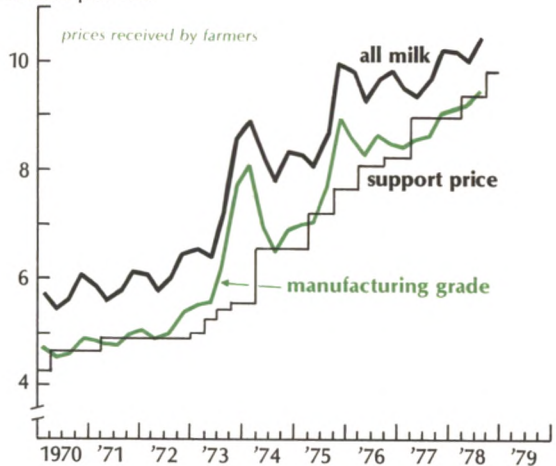
For the next four years, however, hog slaughter trended irregularly downward, falling to a seven-year low in 1973 and then plunging in 1975 to the lowest level in decades. From the 1971 peak to the 1975 trough, hog slaughter fell a fourth, as did per capita pork consumption.

Production has been increasing since 1975. But the increases have been surprisingly modest in recent years in light of the favorable profits. Although the uptrend in hog production is expected to continue throughout the rest of the decade, it may be next year before the increases will have boosted per capita pork consumption above the average of the sixties.

Dairy production—Dairy farmers have

Ratcheting of government supports boosted milk prices

dollars per cwt.



also seen profit margins squeezed in the seventies, mostly from high feed costs. Unlike cattle and hog producers, who had to contend as always with cycles, dairy farmers have seen their welfare tied closely to government support prices.

The financial squeeze on dairymen was most apparent from 1973 to 1975. Throughout this period, milk production was the lowest since the early fifties. And in 1974, the milk-feed price ratio—a measure of profitability—dropped to a 17-year low.

Government purchases of dairy products—the means by which milk prices are supported—have fluctuated widely in the seventies. After averaging over 6 billion pounds (milk equivalent) a year from 1970 to 1972, government purchases over the next four years dropped to an annual average of less than 2 billion pounds. But with an increase in milk production and further boosts in the support price, the amount of dairy products the government bought in 1977 surged to 6.1 billion pounds.

Financial position of farmers

The widely fluctuating earnings from agriculture in the seventies brought marked changes in the overall balance sheet of the

farm sector. Estimates at the beginning of 1978 put farm equity and farm debt at levels nearly two and one-third times their totals in 1970. In dollar terms, that was an unparalleled growth for both. And for debt, at least, it was also an unprecedented growth in relative terms.

Farm assets approached \$710 billion at the beginning of this year. Three-fourths of that was in real estate, compared with about 70 percent at the beginning of the decade and 65 percent at the beginning of the sixties. Nationwide, the value of farm real estate averaged two and one-half times the value in 1970. And in the Corn Belt, land prices had nearly tripled.

The unprecedented growth in land values has yielded substantial equity gains for landowners and, in many respects, the collateral to support the huge increase in farm debt.

Two factors have contributed to the rise in farm debt in the seventies. One was the debt-financed boom in capital expenditures and land purchases that came with the surge in farm income beginning in late 1972. Gross expenditures on farm tractors, for example, have increased every year of the decade, but they increased more than a third in 1973 alone. Total farm gross capital expenditures have averaged about \$11 billion a year in the seventies. That is almost twice the average for the sixties.

The other has been the more recent squeeze on cash flows stemming, for cattlemen, from their prolonged losses, and for crop farmers, from the simultaneous buildup in grain stocks and drop in grain prices. With cash flows squeezed, debt repayments slowed. Moreover, the financial squeeze on farmers prompted increased government lending. For the first time, the Small Business Administration was authorized to make loans to farmers. Lending provisions of the Farmers Home Administration were liberalized. And the higher CCC loan rates offered by the Food and Agriculture Act of 1977 encouraged farmers to place large amounts of grain under loan. Commodity Credit Corporation loans last year totaled nearly \$4.5 billion compared with \$1 billion in 1976.

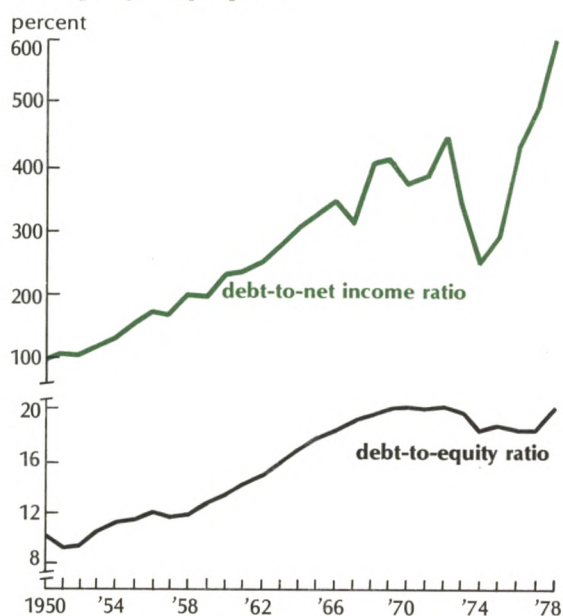
Implications

If nothing else, the seventies have been exciting. Wide swings in farm production and prices have brought short-lived booms and busts. The general public has been aware of both, either because of rapidly rising food prices or because of the debate over policies to be pursued. Concentration on the short-term issues, however, could obscure the longer-term implications arising from the developments in the seventies.

Much of the attention given to the boom in farmland prices is probably deserved. As an investment, farmland has had few equals in recent years. For most of the purchasers—farmers that must pay for the land from farm earnings—the boom has meant an escalation in production costs. It has sharply increased the costs of cash-renting land—where a large part of the nation's crops are grown.

Higher farmland prices, in conjunction with other escalating production costs, have increased the risks inherent in farming. The impact of lower commodity prices on

Farm debt soared to new highs relative to income, but gains in equity kept pace



farmers' cash flows was vividly evident in 1977, and with the reaccumulation of large grain stocks, similar conditions may reappear in the future. Moreover, the increased risks are further heightened by the rapid increase in farm debt in recent years. Although the debt-to-equity ratio has remained fairly stable for years, the debt-to-income ratio has increased markedly. In 1950, farm debt and net farm income before inventory adjustment were nearly equal. Ten years later each dollar of net income was matched by nearly \$2.25 in outstanding farm liabilities. By 1970, there was nearly \$3.75 in debt outstanding for each dollar of net income and projections indicate that in 1978 that ratio approached 6:1.

Over the long haul, one of the more intriguing aspects of the land boom could lie in the implications for who will own or control agriculture in the future. The emotional issue of foreign ownership currently in the limelight may not be resolved quickly. And not far below the surface is the almost equally charged issue of domestic investors, either individuals or companies, that are not themselves farm producers.

One of the most significant developments of the seventies is the increased integration of U.S. agriculture with world markets. During recent years, the importance of farm exports to the U.S. balance of trade has been highlighted by the resumption of trade with communist countries and with other developing and expanding foreign markets for farm products. In the future, year-to-year supply/demand adjustments will be influenced far more by worldwide conditions and will no longer be confined solely to domestic markets. And ongoing efforts to reduce trade restrictions worldwide, if successful, will provide an even greater global environment for U.S. agriculture.

Farmers have become more aware of the importance of marketing skills in the seven-

ties. Wide fluctuations in commodity prices—often in the space of only a few months—have made timing of sales one of the main elements of successful farm management. As a result, there has been a large buildup of on-farm storage facilities. This, too, represents a shift from the past, when many farmers used on-farm storage only for what they expected to use themselves but left most of the risks and responsibilities for the storing and marketing of crops to local grain elevators, large grain companies, and the government. The implications for who will bear the risks of storing crops in the future seems to mark a fundamental change in the seventies, encouraged partly by the implementation of the farmer-controlled long-term grain reserve.

Not only has there been a return to government programs as necessary business considerations for farmers. There has also been an increase in the farm-related activities of government agencies that were not concerned with agriculture in the past.

Regulations of the Environmental Protection Agency and Occupational Safety and Health Administration are apt to become more important in agriculture's future. Despite urgings by some government officials that EPA and OSHA carefully weigh the costs and benefits of regulatory changes, there is little doubt that greater intervention in agriculture by these two agencies could become an aggravation to producers, increasing costs of operation and possibly reducing output.

Issues related to the nutrition and the quality and safety of food are also likely to draw more government influence in the future. Recent government actions regarding nitrite in bacon, mechanical deboning of meat, and the refinement of grading standards for food products may only mark the beginning of things to come in the future of U.S. agriculture.

Effects of seasonal adjustment on the money stock

Robert D. Laurent

The emphasis placed on money stock changes in the conduct and analysis of monetary policy has recently increased interest in the seasonal adjustment of the money stock. This new interest can be seen several ways. Money market analysts, for example, are using an apparent seasonal pattern in the seasonally adjusted money stock as an aid to prediction. Also, annual revisions in the seasonal adjustment factors the Federal Reserve uses in adjusting raw money figures seem to be getting bigger. The most recent revisions were the largest ever.

These developments suggest there could be problems with the current procedure for seasonally adjusting the money stock. As a result, the Federal Reserve has appointed a commission of outside economists and statisticians to review the seasonal adjustment techniques used by the Board of Governors in adjusting financial data.

This article examines the effect of seasonal adjustment on the money stock and discusses some of the problems in seasonally adjusting this series. Though the article concentrates on the money stock, much of the discussion applies to any series in which the adjustments for seasonal variations are large.

Data are seasonally adjusted to reveal underlying trends. Retail sales always increase in December, and housing starts always increase in March. Without adjustment for these patterns, changes can be deceiving, creating an impression that the underlying trend in retail sales or housing starts has suddenly accelerated. Removal from the data of "normal" changes expected during these months reveals the underlying trend.

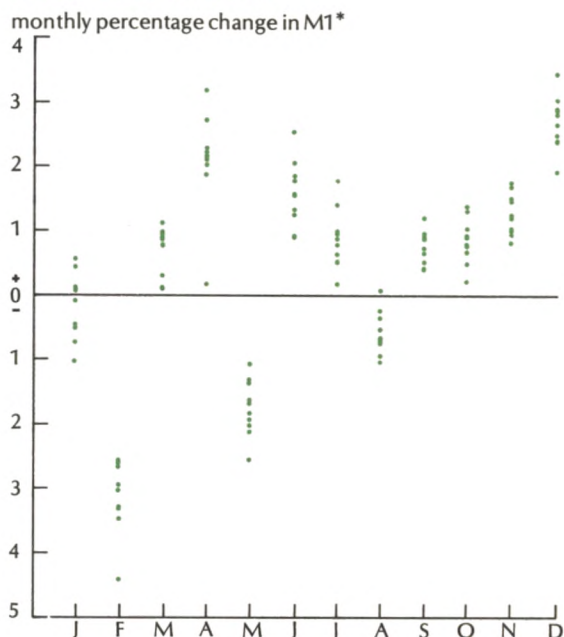
Calendar months serve as proxies for contemporaneous changes in economic forces. Retail sales in December reflect year-

end holiday buying. Housing starts in March reflect the beginning of favorable weather for building. Seasonal adjustments are based on an assumption that such influences are regular enough to be represented by calendar months.

The seasonal pattern

Even casual examination of changes in the money stock shows a pronounced seasonal pattern. This is true regardless of the measure of the money stock. But it is most pronounced for the narrowest measure—M1 (currency plus demand deposits)—on which this article focuses.

Unadjusted money data show a seasonal pattern



*Data covers 1968-1977 inclusive.

The money stock contracts for the first two months of the year, and then expands through the April tax date. It contracts in May, then expands through June and July. August shows a mild contraction before an expansion that culminates in the year-end holiday season.

The seasonal adjustment of money is complex. A simplified description of the adjustment is useful in explaining the effects—and problems—of the adjustment process.¹ The new money-stock figure published every month is adjusted by dividing previously determined *seasonal adjustment factors* into the raw (unadjusted) figures to obtain the seasonally adjusted money stock. Thus, a seasonal adjustment factor of 1.02 indicates the effect of that particular month is expected to raise the unadjusted data 2 percent above the annual average.

The predetermined seasonal adjustment factors used to adjust data when they are first published are the most current set of factors—usually those used to adjust the previous year's money stock. The seasonal adjustment factor used to adjust the first-published figure for November 1978, say, will be the same factor used in the 1978 revision of the November 1977 figure. The factor used to adjust a particular month's figure is revised annually for several years after the first published figure appears. In this article, the first published seasonally adjusted figure for a particular month is taken to be the first figure for that month appearing in the *Federal Reserve Bulletin*.

In the adjustment of M1, separate seasonal adjustments are made to currency and demand deposits and the two components are then combined to obtain the seasonally adjusted money stock. Unadjusted monthly figures for each component are

divided by the average monthly figure for the year surrounding that month. The resulting series of monthly figures, called the *seasonal irregular ratios*, shows whether the component tends to be high or low that month. The high level of demand deposits in December, for example, is reflected in seasonal irregular ratios that from 1968 through 1977 were always above 1.02. Over that period, December demand deposits were always at least 102 percent of the surrounding 12-month average.

Monthly seasonal irregular ratios form the base for the seasonal adjustment factors. Since the seasonal irregular ratios are obtained by dividing the unadjusted monthly figure by the average for the surrounding 12 months, there is an implicit adjustment for growth in the money stock. Also, the seasonal irregular ratio is based on an assumption that the effects of different months can be expressed as percentage changes in the unadjusted figure. If seasonal effects were assumed constant—regardless of the size of the money stock—then the 12-month surrounding average would be subtracted from the unadjusted figure.

The effect of changing seasonals

Seasonal adjustment factors can be obtained from seasonal irregular ratios in several ways. One consideration is whether the seasonal adjustment factors are assumed constant or whether they are assumed to change over time. If they are assumed constant, equal weight is given to the same month every year. If the factors are believed to change over time, more weight is given to seasonal irregular ratios in nearby years.

Current seasonal adjustment of the money stock assumes that seasonal factors are changing. The rationale for a moving seasonal is that the economic forces for which the seasonals serve as proxy may be changing. The importance of some holidays—or vacation habits—may change slowly over time, changing seasonal adjustment factors.

The extent to which the seasonal for any calendar month is allowed to vary over

¹For a more comprehensive description of the seasonal adjustment process, see Thomas A. Lawler, "Seasonal Adjustment of the Money Stock: Problems and Policy Implications," *Economic Review*, vol. 63: no. 6, p. 23, (November-December, 1977), Federal Reserve Bank of Richmond. This article and its companion article discuss some of the issues raised here and list references to other works on the same topic.

different years depends critically on the relative weight given to the seasonal irregular ratios for that month in determining the seasonal adjustment factor. The more weight given the current year's seasonal irregular ratio, the more seasonal adjustment factors are allowed to vary from year to year.

At one extreme, every year's seasonal irregular ratio is given the same weight and the seasonal adjustment factors are equal for every year. The seasonal adjustment factor for a particular calendar month can, of course, change over time with the addition of new information. At the other extreme, the seasonal irregular ratio is given all the weight, making the seasonal adjustment factor identical to the seasonal irregular ratio in that month.

The first extreme, having constant seasonals, produces a fairly volatile money stock. The second, with more volatile seasonals, produces a money stock that moves smoothly with changes in trend growth.

In practice, each seasonal adjustment factor is determined by a seven-year span of seasonal irregulars centered on that year, the weights declining as data move away from the center year. Thus, the November 1978 seasonal adjustment factor will eventually be determined by November seasonal irregular ratios from 1975 through 1981. This procedure allows seasonal adjustment factors to vary significantly year to year, since the three middle years of the seven-year span are each given a fifth of the total weight in determining the seasonal adjustment.

Seasonal adjustment factors, however, are not obtained simply by the mechanical manipulation of the seasonal irregular ratios. Extreme seasonal irregular ratios are given less weight in determining seasonal adjustment factors. This provides a more stable seasonal adjustment factor series and prevents an inordinate response to extreme changes in the data. More important, seasonal adjustment factors are adjusted judgmentally to take account of other factors. Often of significant magnitude, these judgmental adjustments can take account of sharply changing factors that, while known to

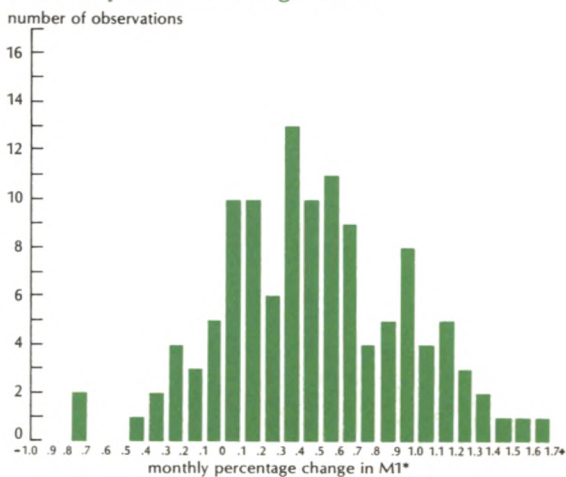
affect the money stock, would not be picked up by a moving seasonal. Examples are monetary policy changes and changes in tax dates and holidays.

The smoothing effect of seasonal revisions

The process used to adjust money-stock data produces large subsequent revisions that smooth out the first-published figures. When the money stock figure is first published, the seasonal adjustment factor used for the month gives no weight to the unadjusted money stock for that month. Later revisions, however, use that month's seasonal irregular ratio in determining the seasonal adjustment factor. As a result, revisions move the seasonal adjustment factor closer to the actual seasonal irregular ratio. This has the effect of smoothing seasonally adjusted changes in the money stock.

Although extremes of the seasonal irregular ratio are given reduced weight in the determination of seasonal adjustment factors, the smoothing effect of seasonal revisions on extreme changes in the money stock is pronounced. From 1968 to 1977, there were 17 instances where the first published data showed monthly increases in the money stock of more than 1 percent and 16 instances where the data showed declines. In the 1978

The first published M1 figures . . .



*Data covers 1968-1977 inclusive.

revision, every one of the 17 large increases had been reduced and 15 of the 16 declines showed smaller declines. Only seven instances of money declines remain in the most recent revision.

Two factors account for the difference between the first-published data and later revisions. One is changes in the underlying raw data. The other is changes in seasonal adjustment factors. Separation of the effects of these two factors make it clear that almost all the smoothing comes from seasonal revisions.

From 1968 through 1977, the first-published data show a mean monthly change in money of 0.461 percent. A measure of the dispersion in the data is the average absolute deviation from this mean value—the average difference (up or down) between each observation and the average observation. The average absolute deviation of first-published data is 0.376 percentage point. When the first-published data are adjusted to reflect revisions in the raw data, the mean monthly change rises to 0.494 percent and the average absolute deviation falls slightly to 0.364 percentage point. When these data are further adjusted to reflect the 1978 revisions in seasonal adjustment, the mean monthly change becomes 0.490 percent and the average absolute deviation falls to 0.267

percentage point.

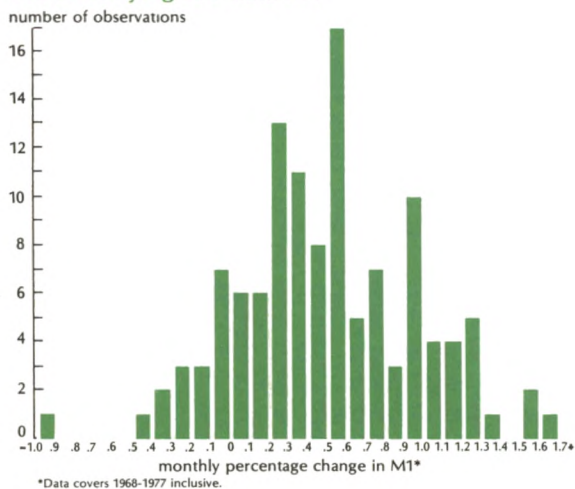
Clearly, revisions in the seasonal adjustment sharply reduce the dispersion of the monthly percentage changes in the money supply—and the revisions are significant. The average absolute change produced by seasonal revisions was 0.220 percentage point—nearly half the mean percentage change before seasonal revision.

A problem for analysis

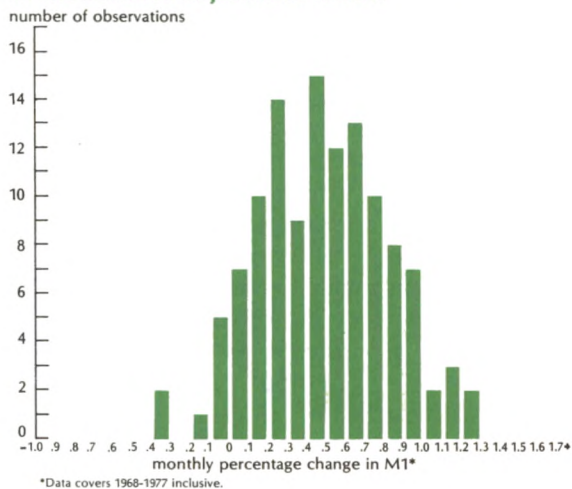
The pronounced smoothing that comes from seasonal revisions raises several questions about the seasonally adjusted money series. Aside from whether the first-published data or the later revisions reflect seasonal adjustments more accurately, smoothing poses problems of consistency for analysts of monetary policy.

Most research that relates changes in the money stock to changes in economic activity uses the smoothed seasonally adjusted money series. Though seasonal revisions do not usually change the general pattern of acceleration or deceleration in growth of the money stock, the revised series is considerably smoother than the first-published data. By relating this smoothed series to variations in economic activity, analysts

... are not greatly affected by revisions in the underlying raw data ...



... but are considerably smoothed by revisions in the seasonal adjustment factors



associate dampened accelerations or decelerations in money with fluctuations in economic activity. As a result, even small changes in money growth seem to have fairly large effects on economic activity. But the money data used in analyzing current policy are the volatile first-published figures. Inserted into the historical relationship between money and income, these unsmoothed data imply unduly large changes in economic activity.

As an example of the smoothing process, the first-published M1 data for February 1971 through January 1972 showed a six-month period in which the money stock grew at an annual rate of 12.5 percent followed by six months in which the annual rate was 0.9 percent. Recent revisions of the data show, however, that the money stock grew at a rate of 9.2 percent in the first six months and 4.4 percent in the second. Revisions reduced the deceleration in money growth from 11.6 percentage points to 4.8 percentage points.

In another case, the direction of changes was actually reversed. First-published data from February 1972 through January 1973 showed M1 grew at an annual rate of 9.9 percent in the first six months and 6.5 percent in the second six months. The most recent revision shows a growth of 8.1 percent in the first six months and 10.5 percent in the second. Revisions show that instead of slowing in the second six months, growth in the money stock was picking up.

Consistent analysis requires adjustments either to the money stock used in relating money to economic activity or the first-published money figures. Otherwise, the interpretation of recent monetary policy is apt to exaggerate its consequences.

The most important question raised by the smoothing of money growth rates through seasonal revisions, however, is whether data are improved. Every seasonal adjustment produces a seasonally adjusted money series. Without an independent measure of the "true" adjusted money supply figures, there is no obvious way of deciding which of these seasonally adjusted series (and, therefore, the seasonal adjustment fac-

tors that produced them) is correct. Revisions in seasonal adjustments that produce the smoothest money-stock figures are not necessarily the best seasonals. As noted earlier, giving exclusive weight to each monthly seasonal irregular in determining the seasonal adjustment factor can purge the monthly data of all volatility except slight changes in trend. But too much volatility can be removed from the series.

The smoothing effects of the seasonal revisions raise methodological questions in assessing the seasonal adjustment process. How can it be said that the seasonal adjustment is known, if it is known only after the unadjusted data has been observed? The problem hangs on the difference between explanation and prediction. Substantial revision of seasonals can *explain* away almost all the volatility in unadjusted money—after the volatility has been seen. These same revised seasonal adjustment factors, however, are much less useful at *predicting* future money figures and removing the volatility in the first-published data.

The size of the seasonal revisions raises other questions about the seasonal adjustment process. Since calendar months serve as proxies for contemporaneous economic forces, the seasonal adjustment of money assumes that the forces are regular enough to be represented by calendar months. If, however, these forces are changing by large and unpredictable amounts, then it does not seem reasonable to represent these forces with seasonals. Instead, it might be better to leave the influence of the forces in the seasonally adjusted data and identify these forces as determinants of the adjusted data.

The influence of policy

One reason seasonal adjustment is more complicated for money than for most seasonally sensitive economic series is the crucial importance of policy in determining the money stock. Monetary policy can have a direct and immediate effect on the money stock. Were this not so, it would make little sense to interpret monetary policy in terms of

changes in the money stock.

Suppose that for two or three successive years monetary authorities ran an easy or tight policy the same month, producing large or small rates of growth in money. Clearly, the policy effects should be kept in the seasonally adjusted money stock series. But unless some adjustment is made to take account of these policy effects, the seasonal revision process is such that policy effects would be treated as a shift in seasonal factors. They would be removed from the revised seasonally adjusted data. Then, in later years when money figures revert to normal, the first-published data will be made more volatile by the interim change in the seasonal. The importance of policy makes the judgmental contribution to seasonal adjustment of the money stock an important factor. Effects of policy could, in fact, explain the appearance of seasonals in seasonally adjusted data.

Policy considerations complicate seasonal adjustment in another way. To a great extent, the seasonal variation in the money supply is itself a product of monetary policy. The seasonal movement is actually a change in the demand for credit. Before the Federal Reserve was established, the seasonal effect was felt primarily on interest rates and not nearly as much on money. The year-end increase in credit demands, for example, resulted largely in higher interest rates. The increase in money was only slight.

Since the Federal Reserve was established, it has acted to dampen the seasonal movement in interest rates. This is done by increasing reserves and money when seasonal demands for credit rise and reducing them when credit demands fall. In this way, the monetary authorities smooth out interest

rates over the year but intensify the seasonal variation in money.

While it is usually better to leave the effects of policy in the seasonally adjusted numbers, policy effects producing a regular seasonal in money seem different. If year in and year out, policy produces a seasonal movement in the money stock, it would seem better to remove the policy effect from the seasonally adjusted numbers. The difficulty is in distinguishing this recurring seasonal pattern from the ephemeral effects of contracyclical policy that happen to show some seasonal pattern over a period of years.

Summary

The importance of money and the increasing volatility of the money stock have focused attention on the seasonal adjustment of the money stock data. There is clearly a pronounced seasonal in the money stock. It is not clear, however, exactly what the pattern is or how it changes over time.

One important characteristic of the current method of seasonal adjustment is the pronounced smoothing in the rate of growth in the money stock produced by successive revisions of the seasonal adjustment factors. This smoothing creates a danger of inconsistency in the application of relationships estimated with revised data to the analysis of current monetary policy.

More important, it raises the question of whether the smoothing process produces better seasonally adjusted data. The answer involves serious problems of methodology as well as economics. Finally, the role of monetary policy in determining the money stock makes judgmental modifications of seasonal adjustment factors important.

Multibank holding company expansion in Michigan

Joseph T. Keating

Michigan has only 365 banks, the fewest of any of the five states making up the Seventh Federal Reserve District. Even Wisconsin, with deposits totaling only about half the \$36 billion in Michigan, has well over 600 banks. Illinois, with practically no branching, has considerably more than 1,200 banks. In Michigan, where deposits total only a little over half the deposits in Illinois, there are roughly 1,600 branches.

As in other states, the structure of banking in Michigan was formed through the interaction of state banking law and regional economic developments. And as in other branching states, the structure of banking there has long been concentrated. Less than a tenth of the banks, for example, hold two-

thirds of the deposits.

But also as in other states in recent years, a third factor has come into prominent play. Since 1971, when bank holding companies were first allowed in Michigan, 22 multibank holding companies have been formed. They have acquired over a third of the banks.

Most of the expansion of multibank holding companies has been in the southern part of the state, where a heavy concentration of industry has caused population and income to cluster in large urban areas. Nearly two-thirds of the banks acquired by multibank holding companies are in Standard Metropolitan Statistical Areas in the industrial south. These banks hold almost three-fourths of the deposits in these urban areas.

Michigan banks by size and holding company status*

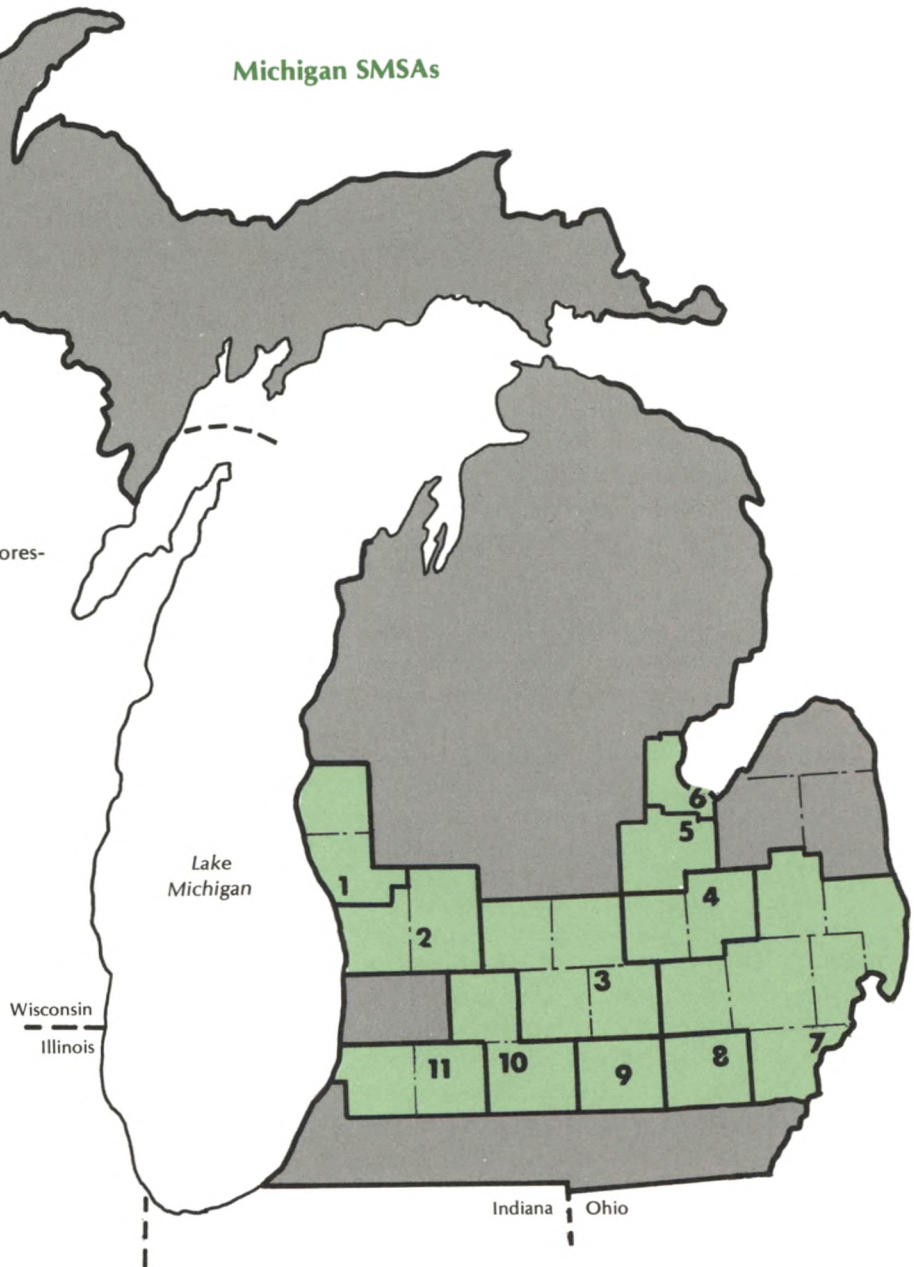
Deposit size class	All banks		Banks in multibank holding companies		Banks in one-bank holding companies	
	Number	Deposits (million dollars)	Number	Deposits (million dollars)	Number	Deposits (million dollars)
\$2.5 bil. or more	3	11,320.4	3	11,320.4	—	—
\$1.0 bil. - \$2.5 bil.	2	2,709.7	2	2,709.7	—	—
\$500 mil. - \$1.0 bil.	6	4,556.9	4	2,911.1	1	853.3
\$250 mil. - \$500 mil.	7	2,570.7	4	1,456.0	1	369.7
\$100 mil. - \$250 mil.	37	5,853.8	18	3,094.9	5	701.0
\$50 mil. - \$100 mil.	52	3,660.3	17	1,259.2	3	209.0
Less than \$50 mil.	258	5,429.5	83	1,473.0	8	182.1
Total	365	36,101.3	131	24,224.3	18	2,315.1

*Deposits as of December 31, 1977; holding company subsidiaries approved through June 30, 1978.

Michigan SMSAs

SMSA central city

1. Muskegon-Norton Shores-
Muskegon Heights
2. Grand Rapids
3. Lansing-East Lansing
4. Flint
5. Saginaw
6. Bay City
7. Detroit
8. Ann Arbor
9. Jackson
10. Battle Creek
11. Portage-Kalamazoo



Effects of regional development

Michigan is far more industrialized than most states. Nearly a third of nonfarm employment is in manufacturing compared with less than a fourth nationwide. And far more of the manufacturing employment is in the generally better paying production of durable goods. Chiefly because of the auto industry, four out of five of the state's manufacturing workers produce durable goods, compared with three out of five nationwide.

Number of banks in county	Number of counties
0	5
1 or 2	24
3 or 4	29
5 or 6	9
7 - 10	9
11 - 15	4
16 or more	3

*Distribution as of December 31, 1977.

This large proportion of workers engaged in durable goods manufacturing accounts in large part for the earnings of Michigan manufacturing workers being 30 percent higher than the national average.

Per capita income in Michigan, second in the Seventh District only to Illinois, was 6 percent higher than for the nation in 1976, the latest year for which data are available. Since 1970, personal income had increased from \$37.2 billion to \$61.5 billion. During that time, population increased only from 8.9 million to 9.1 million, allowing the state to achieve continued gains in per capita income—even during the years that the auto industry suffered one of its most severe setbacks from recession.

Most of the industry, however, is concentrated in 24 southern counties. The rest of the state—the Upper Peninsula and the northern part of the Lower Peninsula—is still essentially rural with little economic activity that has much bearing on activity in the industrial south. Only 4 percent of the personal income in Michigan is found in the 45 rural counties in the north, where business activity is based mostly on farming, mining, forestry, and the tourist trade.

Eight out of ten people in the state live in 11 SMSAs spread across the southern part of the state. That is more Standard Metropolitan Statistical Areas than in any other state of the Seventh District. It is also a larger proportion of population living in SMSAs than in any other district state.

Ten urban areas made up of 16 southern counties had been designated SMSAs in 1960, when three-fourths of the people in the state lived in these areas. Since then, Battle Creek has also been designated an SMSA and the original ten have grown to include six more counties. Another Michigan county, Monroe, is counted as part of the Toledo, Ohio, SMSA.

In 1975, these 11 SMSAs accounted for 87 percent of the personal income in Michigan. And banks headquartered in the SMSAs accounted for 83 percent of the deposits in the state.

Income is further concentrated within the 24-county region. Detroit, a six-county SMSA with close to half the state's population, has considerably more than half the personal income and bank deposits. Its deposits, in fact, total almost eight times as much as deposits at banks in Lansing-East Lansing, the second largest SMSA.

Though bank deposits, like income and population, are regionally concentrated, Michigan's banks are not. Over half the banks in the state are located in 59 non-SMSA counties, where deposits last year amounted to only \$6 billion against the \$30 billion on deposit at banks in SMSA counties. However, over three-fourths of all branch bank offices are concentrated in SMSA counties. That the distribution of branch bank offices follows the distribution of income and population,

Banking in Michigan's SMSA¹

SMSA	Deposits (million dollars)	Share of state deposits (percent)	Number of		Share of deposits controlled by MBHCs (percent)
			Banks	MBHC subsidiary banks	
Detroit	19,596.2	54.3	77	36	78.0
Lansing-East Lansing	2,507.8	6.9	20	7	82.7
Grand Rapids	2,250.5	6.2	24	17	93.4
Flint	1,770.7	4.9	10	5	47.1
Kalamazoo- Portage	957.9	2.7	13	6	72.3
Ann Arbor	863.6	2.4	11	2	30.6
Saginaw	703.0	1.9	7	3	83.7
Muskegon-Norton Shores-Muskegon Heights	488.1	1.4	6	3	62.1
Jackson	471.8	1.3	4	0	—
Bay City	323.1	0.9	3	3	100.0
Battle Creek	193.6	0.5	6	3	20.1
Total	30,126.3	83.4	181	85	74.7

¹Deposit data are as of December 31, 1977; multibank holding company subsidiaries through June 30, 1978.

while the distribution of banks does not, can be attributed to state banking law.

Effects of state banking law

Michigan has been a limited branching state since 1937. Banks can establish branches only in the same county as their home office or within 25 miles of the home office. One bank, Michigan National of Detroit, is exempt from this restriction by a grandfather clause. When the current branching law went into effect in 1945, Michigan National already had branches in several cities. It was allowed to keep one in each location.

Michigan banking law also has a home office protection clause that allows branches to be opened only in the same town as the home office or in towns not already served by

a bank or a branch. Otherwise, the only possible locations are in unincorporated areas.

The limited geographic area in which branching is permitted has kept banks from expanding on a regional or state basis. Banks have responded in two ways—both of which have fostered the development of large banks. To attract as many local customers as possible, banks have branched extensively within the areas that are allowed. And to preempt potentially good bank sites, particularly in areas where high population growth was expected, they have opened branches in unincorporated areas. These offices would later be protected if the area were to become incorporated.

As such, a two-tiered banking structure has developed in Michigan's SMSAs. Each SMSA is typified by a few large banks that con-

trol most of the deposits and a larger number of smaller banks that divide the remaining deposits.

When the legislature repealed the state's longstanding prohibition against Michigan corporations owning bank stock, opening the way for the creation of multibank holding companies, banks were given a way around the state's restrictive branching law. Through holding company arrangements, they could expand their service areas either by chartering new banks or by acquiring existing banks beyond the 25-mile limit of the branching law. Also, many suburbs where banking offices had been protected from competition by the home office rule could now be entered through the chartering of new subsidiary banks.

But while changes in the law providing for holding companies created the means for improving bank competition, the new law also gave holding companies a means of reducing competition. By acquiring an existing bank in a market where the company already controlled a bank, holding companies could reduce the choices open to the banking public. With this kind of expansion, the number of competitors would be reduced and the concentration of banking resources increased.

As the law puts no limit on either the number of bank subsidiaries a company can own or the amount of deposits it can control, some bank holding companies have expanded statewide while others have concentrated their expansion efforts in market areas they already served, but where entry by branching was prohibited.

Effects of multibank holding companies

The lead banks of Michigan's 22 multibank holding companies rank among the largest in the state. Half of them hold deposits of more than \$250 million. Seventeen are in SMSAs.

Multibank holding companies have acquired 72 other existing banks, half of them also in SMSAs. And they have chartered 37 new banks, all but five of them also in SMSAs.

Michigan multibank holding companies by size*

<u>Number of subsidiary banks</u>	<u>Number of companies</u>
15 or more	2
10 - 14	0
7 - 9	7
4 - 6	4
2 - 3	9

<u>Deposit size class</u>	<u>Number of companies</u>
\$5 billion or more	1
\$3 billion to \$4.9 billion	3
\$1 billion to \$2.9 billion	3
\$500 million to \$999.9 million	5
\$100 million to \$499.9 million	7
Less than \$100 million	3

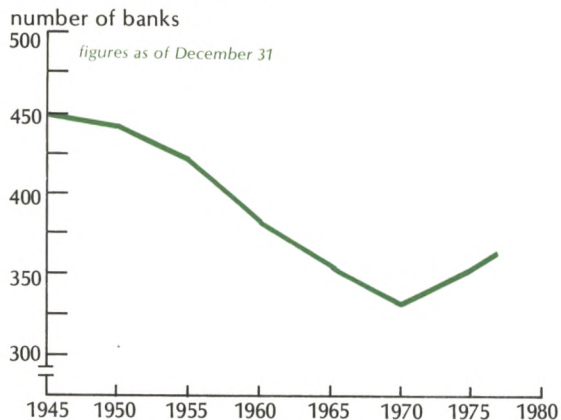
*Deposit data as of December 31, 1977; multibank holding company subsidiaries approved through June 30, 1978.

Three-fifths of all subsidiaries of multibank holding companies are in ten SMSAs, the one-county Jackson area being the only one that multibank holding companies have not entered.

Though most of the expansion has been where the demand for banking services is strongest, three companies controlling 13 banks operate exclusively in the Upper Peninsula. Two other companies, one in Kalamazoo and one in Detroit, have expanded into the Upper Peninsula through the acquisition of six existing banks.

Since multibank holding companies have been allowed in Michigan, a downward trend in the number of banks has been reversed but the concentration of banking resources has increased. Through mid-1978, the number of banks had increased by 34 while the number of independent banking organizations had dropped by 75.

Downtrend in number of Michigan banks reversed by multibank holding companies



A 1975 Federal Reserve Bank study of holding company developments in Michigan showed that the expansion of multibank holding companies had been confined primarily to the chartering of new banks in markets already served by the holding company or to the acquisition of existing banks in new markets.¹ Little use had been made of the procompetitive alternative of chartering new banks in markets where the holding company was not already represented.

The prior expansion did not increase the number of competing bank organizations in a market nor did it immediately change the structure of the local market (usually measured by the distribution of market shares among competing organizations).

This kind of expansion is still going on. Of 109 banks acquired by multibank companies through June 1978 (excluding lead banks), 21 were new banks chartered in markets already served by the parent company and 58 were existing banks acquired in new markets.

The newly chartered banks have all been used as a means around the state's home office protection rule. Although costs are higher for starting a new bank than for open-

¹For information on the development of multibank holding companies in Michigan through August 31, 1975, see Nancy M. Goodman, "Holding company developments in Michigan," *Business Conditions*, October 1975.

ing a branch, the rapid growth of some suburbs has made entry with a new bank feasible.

The 58 existing banks acquired in new markets have allowed Michigan's largest banking organizations to expand beyond their own urban markets into other urban markets in the southern part of the state.

The five largest multibank holding companies headquartered in Detroit have acquired banks in metropolitan banking markets such as Lansing, Grand Rapids, Ann Arbor, Muskegon, and Bay City. Expansion into these other metropolitan areas would have been impossible without the holding company form of organization.

Likewise, multibank holding companies in Grand Haven and Grand Rapids have acquired banks in the Detroit market. The company in Grand Haven has also gone into the Flint market, as has a company based in Bay City. A Flint-based company has entered the Lansing market. A Kalamazoo company has entered Lansing, Muskegon, and Ann Arbor. And a Midland company has entered the Battle Creek SMSA.

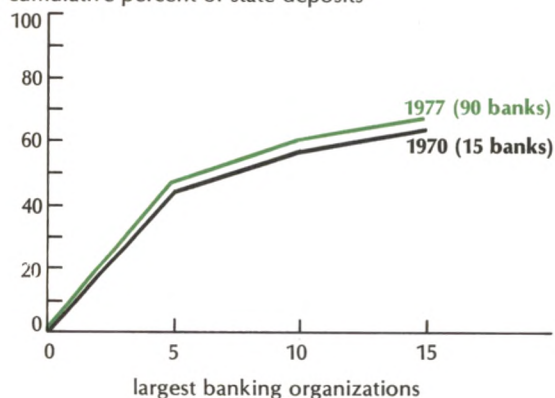
More entries into new markets with new banks would have improved the competitive structure of banking in Michigan, giving the public more alternatives without increasing the concentration of deposits. In the last three years, multibank holding companies have begun making more entries that increase alternatives. By mid-1978, nine multibank holding companies have entered ten new markets with 16 newly chartered banks. Ten of these banks have been chartered since September 1975.

The two largest multibank holding companies, both based in Detroit, have entered the Kalamazoo market with new banks, and one has also entered the Flint market. Companies based in Kalamazoo have established new banks in the Grand Rapids and Battle Creek SMSAs. A company in Grand Rapids has entered Muskegon with a newly chartered bank.

Expansion of multibank holding companies, then, has resulted mainly in large, urban banks entering other SMSAs beyond the 25-mile limit of the branching law and

Formations of multibank holding companies slightly increase concentration of Michigan deposits

cumulative percent of state deposits



areas of their own SMSAs that were previously closed to them. Multibank holding companies have eliminated 12 bank alternatives in three SMSAs, while being directly responsible for 35 instances of initial entry into ten SMSAs, all of which would have been precluded under the branching laws.

The influence of Michigan's large banks is growing as the expansion of multibank holding companies has increased the number of metropolitan banking markets in which these banks compete and has caused a decline in the number of independent banks in Michigan. As this trend continues, Michigan's banking structure appears to be evolving toward what is actually a statewide branching state, where a few large banks compete with each other in almost every major banking market.

Edge act and agreement corporations: mediums for international banking

Neil Pinsky

Expansion of the international activities of U.S. banks has been one of the most remarkable developments in American banking over the past 20 years.¹ The most “visible” sign of this expansion has been the growth of foreign assets of U.S. banks. From just over \$6 billion in 1957, these assets had increased to almost \$350 billion at the end of 1977. Less visible but equally remarkable has been the institutional adaptability of banks, which facilitated the expansion.

One sign of this adaptability has been the rapid growth in recent years of special corporate entities known as Edge Act and agreement corporations. Authorized by federal banking laws as channels for conducting international activities, these corporations increased in number from 38 in 1964 to 122 in 1977. By the end of 1976, the last year for which detailed figures are available, their total assets reached \$11.6 billion.

Initially, Edge Act and agreement corporations made it possible for U.S. banks to engage in international banking and finance activities from which they had been barred. In recent years, these corporations have become the main vehicle for banks to establish international banking offices in financial centers outside their home states.

Legal foundations

Banks in the United States were slow to engage in international activities. Even though international trade and foreign in-

flows of capital had always been integral to the country’s economic development, the provision of financial and banking services that typically underlie such transactions remained in the hands of European banks.

Much of this was due to the strong domestic orientation of most U.S. banks. In part, however, it was also due to the legal restrictions the government placed on the international activities of banks. Until 1913, national banks were barred from financing foreign trade through bankers’ acceptances. They were also barred from establishing branches overseas.

At the turn of the century, as the United States was becoming a major industrial power, attitudes toward international banking began to change. In 1913, the Federal Reserve Act lowered the legal barriers to participation in international banking by national banks. National banks with \$1 million in capital and surplus could establish branches in foreign countries, subject to approval of the Federal Reserve Board, “. . . for the furtherance of the foreign commerce of the United States, and to act, if required to do so, as fiscal agents of the United States.”²

Support for the legislation came from the belief that expansion of the authority of banks to conduct business abroad would help in the promotion of U.S. exports and the extension of credit to European governments.

Over the next three years, only one bank—one of the country’s largest—took advantage of the new authority. The costs and risks of expanding abroad were apparently perceived as too great for any but the largest banks to bear alone. To broaden the base of

¹For a historical perspective on this development, see “Banking goes international,” *Business Conditions*, Federal Reserve Bank of Chicago, April 1967. For a more recent survey, see “International banking: Part I,” *Business Conditions*, Federal Reserve Bank of Chicago, September 1975.

²The same authority was extended in 1933 to include state banks that were members of the Federal Reserve.

banks that might be willing to engage in international banking, the Federal Reserve Act was amended in 1916 to allow national banks with capital of \$1 million or more to invest, individually or together with other banks, up to 10 percent of their capital and surplus in institutions chartered by state banking authorities for the sole purpose of conducting international banking business. This authority required that the institution enter into an agreement with the Federal Reserve Board to observe any restrictions that might be imposed. These institutions became known as *agreement corporations*.

Despite the liberal terms of the charters—there is no minimum required capitalization, for example, and no restriction on the nationalities of owners or directors of the corporations—only three agreement corporations were chartered over the next two years.

In a further effort to increase the international activities of American banks, the Federal Reserve Act was amended again in 1919 to allow the Federal Reserve Board to charter corporations to engage in international banking. The amendment was called the Edge Act, after its sponsor, Senator Walter Edge of New Jersey, and corporations chartered under the act became known as *Edge Act corporations*, or simply as Edges.

The International Banking Act of 1978, which was recently enacted, contains significant revisions to the Edge Act. This legislation recognizes the need to improve the competitive position of Edges relative to foreign banks in the United States and elsewhere, end discrimination against the ownership of Edges by foreign-owned banking institutions, and foster the ownership of Edge Act corporations by regional and smaller banks throughout the United States. The expansion and increased competition in international banking that are expected should promote international trade, especially U.S. exports, by bringing international trade financing opportunities to small as well as large farms and businesses.

To facilitate these objectives, the section of the 1978 legislation pertaining to Edges

Regulating Edge Act and agreement corporations

Laws and regulations affecting Edge Act and agreement corporations, contained generally in Sections 25 and 25(a) of the Federal Reserve Act and in Federal Reserve Regulation K, provide the following:

- National banks can invest up to 10 percent of their capital in Edge Act and agreement corporations.
- Edges have a minimum capital requirement of \$2 million. There is no minimum capital requirement for agreement corporations.
- Under the International Banking Act of 1978, the requirement that directors of Edge Act corporations be U.S. citizens is removed. Foreign-owned banking institutions are authorized for the first time to acquire majority control of an Edge. Agreement corporations were never subject to these restrictions on foreign ownership or directors.
- The International Banking Act of 1978 will eliminate the limitation on Edge Act liabilities upon debentures, bonds and promissory notes in excess of ten times its capital and surplus.
- Deposits of Edge Act and agreement corporations are subject to the same reserve requirements as deposits at banks that are members of the Federal Reserve System. The International Banking Act of 1978 eliminates the statutory minimum reserve ratio of 10 percent on aggregate deposits.
- Interest payments on deposits are also subject to the same restrictions as at member banks.

The original act authorizing Edge corporations provided for two types: investment (or financing) Edges and banking Edges. This distinction was largely eliminated in 1963, when Regulation K was revised to allow Edge Act corporations to engage in both types of activities. The only distinction remaining relates to lending limits. An Edge Act corporation is "engaged in banking" when its aggregate demand deposits and acceptance liabilities exceed its capital and surplus. As a banking Edge, it can grant credit to any one customer only up to 10 percent of its capital and surplus. An Edge not "engaged in banking" is commonly called an investment Edge. It can lend as much as 50 percent of its capital and surplus to a single customer.

eliminates or modifies many of the restrictive provisions of the original Edge Act and requires the Federal Reserve Board to revise its regulation of Edges.

Nature of operations

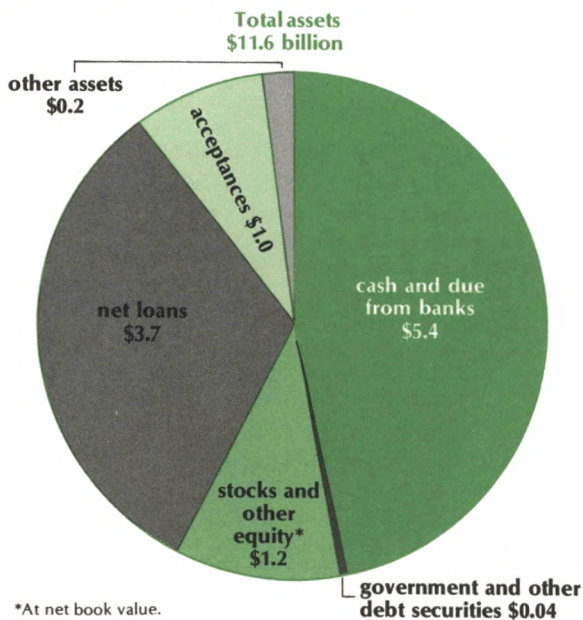
Edge Act and agreement corporations can engage in an array of international banking and financing activities, including trading in foreign currencies, foreign lending, acceptance financing, and foreign collections. They can accept demand and time deposits (but not savings deposits) in the United States as long as the deposits are related to identifiable international transactions. They can accept deposits from foreigners, including foreign governments, and businesses operating primarily abroad, provided the deposits are not used to pay purely domestic expenses.

Originally, the main advantage of an Edge or an agreement corporation to its parent bank was its unique authority to make

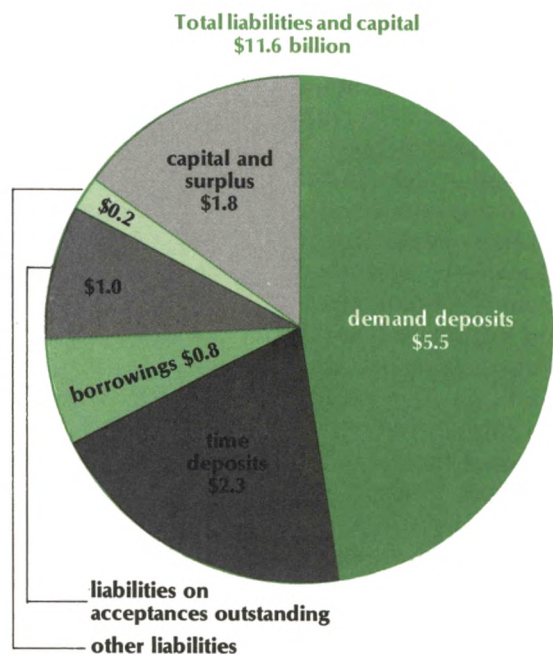
equity investments in foreign corporations.³ While U.S. banks could not ordinarily make equity investments, with an Edge or agreement corporation, they could legally undertake such investments in foreign corporations. This ability put U.S. banks in an improved competitive position relative to banks in other countries, which were typically permitted by their laws to make such investments. The ability of Edges and agreement corporations to provide medium and long-term debt financing as well as equity financing gave banks a useful complement to

³Edges have the "general consent" of the Board of Governors of the Federal Reserve System to make an equity investment of up to \$500,000 in foreign corporations not doing business in the United States, provided they hold no more than 25 percent of the voting shares of the corporation. Otherwise, prior consent of the board is required, unless the purchase of the stock is necessary to prevent loss on an existing loan. Without specific approval of the Board of Governors, no more than 10 percent of an Edge's capital and surplus can be invested in a corporation other than a bank and no more than 15 percent can be invested in a banking corporation.

Edge Act and agreement corporations composite balance sheet, December 31, 1976



*At net book value.



their primary role as short-term lenders. This was particularly true in the case of corporate customers in countries with poorly developed capital markets.⁴

The authority to make equity investments was especially important when Edges and agreement corporations were the only means U.S. banks had of investing in foreign banks in countries where they were barred from establishing branches. In 1966, however, the Federal Reserve Act was amended to allow national banks, with approval of the Federal Reserve Board, to invest directly in foreign banks doing no substantive business in the United States.

The advantage of Edges and agreement corporations as a unique channel for equity investment by American banks was further diminished in 1970, when the Bank Holding Company Act was amended to allow *bank holding companies* to make the same equity investments in foreign corporations that Edges could make.

Edges and agreement corporations, however, still have one investment advantage over other forms of international banking organization. Since they are exempt from some of the restrictions on loans to foreign affiliates and investments in them, Edge corporations are now commonly used by banks as “holding companies” for their foreign subsidiaries and affiliated companies. Edges engaged in equity investments are commonly called investment Edges. They are usually located in the same city as their parent bank.

Edge and agreement corporations can be located anywhere in the United States. This is an important advantage, for banks themselves are prohibited from establishing branches outside their own state, and they are not usually allowed to own banks in other states.

⁴Some Edge Act corporation investments have been a hybrid of debt and equity—loans that can be converted into stock at the discretion of the Edge or loans that give the Edge the option of buying an equity interest in the borrowing corporation. Through such hybrid investments by their subsidiaries, banks could increase their return on loans to foreign corporations, especially in the early stages of a customer’s corporate development.

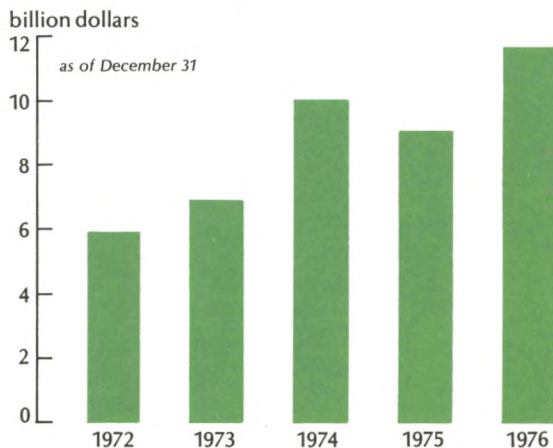
Therefore, Edge and agreement corporations can serve as a vehicle for banks to establish offices outside their home state for purposes of engaging in international banking. With offices in other cities, banks can better serve the trade financing and other international banking needs of their customers. Although they cannot make domestic loans, their presence in other financial centers can be helpful to parent banks in competing for domestic business far from their home offices. Most Edges located outside the parent’s home state primarily engage in international banking rather than in investing in foreign corporations.

Patterns of growth

Despite the advantages of Edge Act and agreement corporations, banks were slow to make use of them. Only 20 Edge and agreement corporations were chartered by 1932. Since they were buffeted by the same forces that caused some 15,000 bank failures in the United States between 1920 and 1933, only five were still in operation by 1934.

Growth of international banking was stymied by the worldwide recession in the thirties, and the war and reconstruction in the forties. Only two Edges and one agreement

Total assets of Edge Act and agreement corporations almost doubled in four years



corporation were chartered between 1932 and 1956.

By the late fifties, however, with world trade expanding and American business increasing its investment abroad, the demand for international banking services increased. Edge Act and agreement corporations were

channels through which American banks could meet the demand.

Some banks used Edges to complement the operations of branches overseas and international departments at their head offices. Others used them as a means of establishing a presence in New York, the country's main

**Edge Act and agreement corporations operating in
the Seventh Federal Reserve District
(December 31, 1977)**

<u>Name</u>	<u>Parent bank</u>	<u>Location</u>	<u>Year estab- lished</u>	<u>Capital</u> (thousands) ¹
American Natl. Overseas Corp.	American Natl. Bank & Tr. Co. (Chicago)	Chicago	1968	\$ 2,341
Bank of America Intl. (Chicago)	Bank of America NT & SA (San Francisco)	Chicago	1971	9,481
Bankers Trust Intl. (Midwest) Corp.	Bankers Trust Co. (New York)	Chicago	1974	3,100
Chase Bank Intl. (Chicago)	Chase Manhattan Bank NA (N.Y.)	Chicago	1974	2,792
Chemical Bank Intl. (Chicago)	Chemical Bank (New York)	Chicago	1974	2,281
Citibank Intl. (Chicago)	Citicorp (New York)	Chicago	1972	2,359
Continental Intl. Finance Corp.	Continental Ill. Natl. Bank & Tr. (Chgo.)	Chicago	1962	34,406
Crocker Bank Intl. (Chicago)	Crocker Natl. Bank (San Francisco)	Chicago	1973	4,717
European-American ² (Chicago) Corp.	European American Bancorp (N. Y.)	Chicago	1977	Not open
Exchange-Israel ² Corp. (Chicago)	Exchange Natl. Bank (Chicago)	Chicago	1973	3 ³
First Chicago Intl., Fin. Corp.	First National Bank (Chicago)	Chicago	1962	23,122
Detroit Bank and Trust Intl.	Detroit Bank & Trust Co.	Detroit	1969	20,897 ⁴
Intl. Bank of Detroit	National Bank of Detroit	Detroit	1963	26,072
Manufacturers-Detroit Intl. Corp.	Manufacturers Natl. Bank (Detroit)	Detroit	1963	4,387
Indiana Natl. Overseas Corp.	Indiana Natl. Bank (Indianapolis)	Indianapolis	1971	2,410

¹December 31, 1976.

²Agreement corporation.

³Exchange-Israel Corporation is an inactive but chartered agreement corporation.

⁴Total consolidated capital for home office and foreign branches.

**Edge Act and agreement corporations of banks domiciled in
the Seventh Federal Reserve District**
(December 31, 1977)

<u>Name</u>	<u>Parent bank</u>	<u>Location</u>	<u>Year estab- lished</u>	<u>Capital</u> (thousands) ¹
Allied Bank ² Intl.	American Fletcher Natl. Bank & Trust Michigan Natl. Bank of Lansing	New York	1968	\$42,947
American Natl. Overseas Corp.	American Natl. Bank & Tr. Co.	Chicago	1968	2,341
Continental Bank Intl.	Continental Ill. Natl. Bank & Tr. Co.	New York	1962	36,879
Continental Bank Intl. (Pacific)	Continental Ill. Natl. Bank & Tr. Co.	Los Angeles	1972	11,116
Continental Bank Intl. (Texas)	Continental Ill. Natl. Bank & Tr. Co.	Houston	1973	5,312
Continental Intl. Finance Corp.	Continental Ill. Natl. Bank & Tr. Co.	Chicago	1962	34,406
Detroit Bank & Tr. Intl.	Detroit Bank & Trust Company	Detroit	1969	20,897 ³
Exchange-Israel ⁴	Exchange Natl.	Chicago	1973	3
First Chicago Intl. Banking Corp.	First Natl. Bank of Chicago	New York	1962	12,523
First Chicago Intl. Finance Corp.	First Natl. Bank of Chicago	Chicago	1962	23,122
First Chicago Intl. (Los Angeles)	First Natl. Bank of Chicago	Los Angeles	1973	5,409
First Chicago Intl. (San Francisco)	First Natl. Bank of Chicago	San Francisco	1973	5,933
First Wisconsin Intl. Bank	First Wisconsin Natl. Bank Corp.	New York	1972	2,532
Harris Bank Intl. Corp.	Harris Trust & Savings Bank	New York	1971	5,517
Indiana Natl. Overseas Corp.	Indiana Natl. Bank	Indian- apolis	1971	2,410
Manufacturers-Detroit Intl. Corp.	Manufacturers Natl. Bank	Detroit	1963	4,387
Intl. Bank of Detroit	Natl. Bank of Detroit	Detroit	1963	26,072
Northern Trust Interamerican Bk.	Northern Trust Co.	Miami	1974	2,505
Northern Trust Intl. Banking Corp.	Northern Trust Co.	New York	1968	6,702

¹December 31, 1976.

²Allied Bank International is owned by 18 regional banks, including American Fletcher National Bank (Indianapolis) and Trust Company and Michigan National Bank of Lansing.

³Total consolidated capital for home office and foreign branches.

⁴Exchange-Israel Corporation is an inactive but chartered agreement corporation.

center for international finance. By 1966, there were 36 Edge Act corporations, 18 of them in New York.

In the late sixties and early seventies, there was an apparent movement toward decentralization of international activities. In recognition of the growing importance of cities other than New York as international banking centers, banks began opening Edge Act and agreement corporations in financial centers across the country. There were 116 Edges and six agreement corporations last year, and their dispersal across the country allowed banks to offer an array of international banking services nationwide. Thirty-eight were in New York. Other heavy concentrations were in Los Angeles (12), Chicago (11), Miami (ten), and Houston (nine).

Edges in the Seventh District

There are 13 Edge and 2 agreement corporations operating in the Seventh Federal Reserve District.⁵ That number, the largest in any district except the Second (New York) and Twelfth (San Francisco), reflects both the significance of Seventh District states in world trade and the importance of Chicago as an international financial center.

Thirteen banks headquartered in the Seventh District own interests in 19 international banking subsidiaries—18 Edges and one agreement corporation. Of these, eight are in the district, six are in New York, and two are in Los Angeles. The rest are in San Francisco, Houston, and Miami.

The establishment of both the Edge cor-

porations in the district and Edge subsidiaries of banks headquartered in the district reflects the pattern of growth in international banking corporations nationwide. Banks in the district established ten Edges in the sixties. Of these, four were “banking” Edges in New York. The rest were investment Edges in each bank’s home city.

In the seventies, five of the nine international banking subsidiaries established by the banks in the Seventh District were Edges located outside New York. In 1971, the California-based Bank of America opened an Edge in Chicago. That was the first Edge in the district set up by a bank from outside the district. Others followed shortly. Six banks from outside the district have Edges in Chicago, and one has an agreement corporation.

Summary and conclusions

Edge Act and agreement corporations have added an important dimension to the expansion of international banking services. Their growth over the past 20 years attests to the advantages they offer banks. The license of Edges to make equity investments in foreign corporations and their exemption from some of the restrictions on banks makes them an attractive vehicle for holding a bank’s foreign subsidiaries. The ability of Edges to establish offices in states other than that of the parent bank makes it possible for banks to serve the international banking needs of their customers nationwide.

Because of these advantages, and revised regulations that will result from the International Banking Act of 1978, Edge Act and agreement corporations can be expected to continue playing an important role in the international activities of U.S. banks.

⁵One of the two agreement corporations, European-American Corporation (Chicago), is a subsidiary of a foreign-owned bank based in New York State.