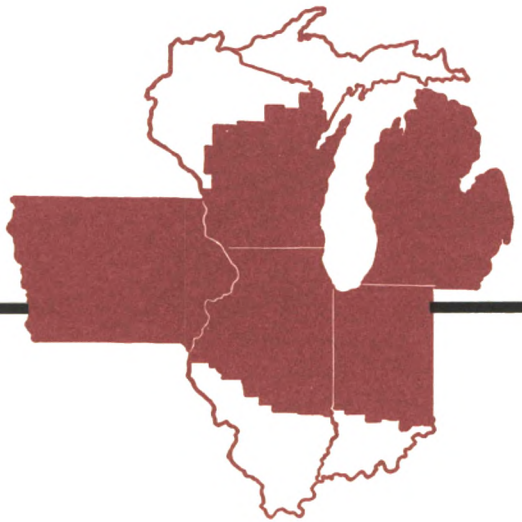
*A review by the* **Federal Reserve Bank of Chicago**

# Business Conditions



**May 1969**

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# What's happening to take home pay?

With taxes and prices rising strongly it is sometimes asserted that real buying power has declined in recent years, or at best held steady. For some families, this has been the case. But for the typical family, real buying power has continued to move higher. The American standard of living is clearly higher than ever before.

Not only is this indicated by casual observation, but it is also supported by the available data. The increasing burdens of national defense, while diverting labor and materials from civilian uses, have not prevented a steady rise in income and consumption by the typical family.

### Rapid income rise

Personal income—including wages, salaries, other labor income, proprietors' profits, rents, dividends, interest, and transfer payments from business and government, less personal contributions for social insurance—rose 9 percent last year, more than in any other year since 1951.

Disposable income—personal income less taxes on income, personal property, and inheritances—rose almost 8 percent last year, despite the 10-percent surtax on the federal income tax beginning April 1.

Much of disposable income is not available for new spending—because of contractual obligations and because part of the income is "imputed," mainly the rental value of owner-occupied dwellings. Changes in disposable income are nevertheless a fairly good measure of changes in consumers' ability to spend. The rise last year was larger than the year before and well above the average of the past 20 years.

But comparison of changes in dollar income requires that allowance be made for changes in prices of goods and services purchased by consumers. Average prices of these items rose almost 4 percent last year, leaving the rise in real income just over 4 percent. This increase in real buying power equaled the rise in 1967 and was less than the increases in 1964-66. But it was slightly above the average increase of the past 20 years.

### Per-capita gains

Adjustment of income for changes in taxes and prices is not enough for evaluation of changes in affluence, however. It is also necessary to consider the increase in population—the rising number of "mouths to feed."

Population in this country has been rising recently about 1 percent a year, with the result that per-capita real disposable income rose 3 percent in 1968, the same as the year before. The average annual increase has been 2.3 percent for the past 20 years. Since 1947, per-capita real disposable income declined in 1949, 1954, and 1958 (all recession years) and increased less than 1 percent in 1951, 1957, and 1960.

Judged on the experience of the past 20 years—a period that in the long view of history could appropriately be described as showing relatively stable growth—the per-capita real income gains since 1965 have been favorable. Neither higher taxes nor in-

flation has kept consumers from buying more goods and services, and, hence, raising their levels of living.

### What about "spendable earnings?"

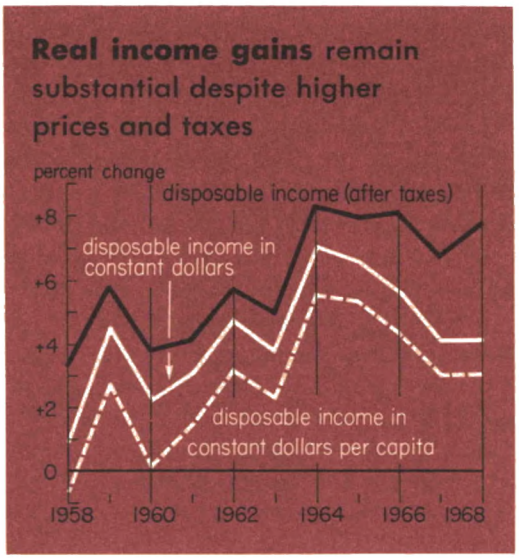
Every month, the U. S. Department of Labor estimates "spendable average weekly earnings of production or non-supervisory workers" for the total private workforce and for such major sectors as manufacturing, construction, and trade. At first glance, recent trends in these data seem to conflict with the trends in total and per-capita disposable income.

Spendable earnings are derived by deducting federal income and Social Security taxes from production workers' average weekly cash earnings. The resulting data are then adjusted for changes in the Consumer Price Index.

In estimating the amount of income taxes to be deducted from average cash earnings, the department assumes use of the optional standard deduction and calculates two series, one for workers with no dependents and one for workers with three dependents, or a total of four personal exemptions.

Although money wages of production workers increased more than 13 percent between 1965 and 1968, the rise was only 3 percent after adjustment for price changes. After deduction of taxes, real spendable earnings declined slightly in 1966 and 1967 under the department's assumptions and increased enough in 1968 to bring these earnings back to the 1965 buying power.

Although real spendable earnings declined several years in the 1950s, there was never a three-year period without an increase in buying power of production workers. Can these results be reconciled with data on disposable income?




### The matter of measures

Spendable income of production workers, computed this way, has severe limitations as a measure of total current income available to American families for spending. The Department of Labor's series is based on gross average money wages, which are calculated by dividing employers' reports of production payrolls by the number of production workers in each establishment.

In manufacturing industries, only 73 percent of all employees are classed as production workers. In the nonmanufacturing sectors, which account for almost three-fourths of the civilian workforce, the proportion of production workers is less than half.

Also, at least one-fifth of the production workers are part-time employees working no more than 35 hours a week. Most such workers do not want full-time jobs—because they are students, housewives, or for other personal reasons. But the department, nevertheless, counts these workers as employees.

Furthermore, a large but unknown number of people hold more than one job and, therefore, may be counted more than once. With the strong demand for workers since 1965, the number of part-time workers and the number of people holding more than one job has increased faster than total employment. The inclusion of part-time workers, the counting of some workers more than once, and the greater prevalence of part-time and "moonlighting" workers all tend to understate the rise in average spendable income of production workers.

Important exclusions from the earnings of production workers are the supplemental payments to labor—such as payments for retirement funds, hospitalization, subsidized lunchrooms, and other benefits. These payments have been rising relative to cash earnings for many years. Altogether, fringe benefits account for 25 to 30 percent of the labor costs of large employers—twice the proportion 20 years ago. Moreover, these benefits are not taxable as current income and are not part of the base on which Social Security taxes and benefits are paid.

The department's assumption in calculating spendable income that workers use the standard optional deduction in computing income taxes is probably true in most cases, but this calculation results in the largest tax that any worker would pay on a given income. Millions of workers have total deductions exceeding the optional standard deduction and, therefore, pay a lower income tax.

Use of the Consumer Price Index to deflate money income to dollars of comparable purchasing power also poses several questions. The price index has been rising faster than the "implicit price deflator" that adjusts disposable income. From 1965 to 1968, the Consumer Price Index rose 10.3 percent while the implicit price deflator for consumer purchases rose 8.8 percent. From 1967 to 1968, the index rose 4.2 percent and the deflator 3.6 percent.

The index is based on a fixed mix of purchases taken as typical of moderate-income city dwellers. The disposable income deflator is weighted according to the proportion of income consumers actually spent on various classes of goods and services. The mix of purchases priced in the index is not exactly representative of any family, and (as noted above) it is not designed to represent all families in the aggregate. For example, both rents and costs of home ownership are included. In January, home ownership costs were estimated 8 percent higher than a year before, largely because of the increase in home mortgage interest rates. About half of 1 percent of the 4.6-percent rise in the Consumer Price Index from January 1968 to January 1969 reflected higher mortgage interest costs. Yet, this higher cost was incurred only by the relatively small proportion of families that negotiated new mortgages.

### Family income also important

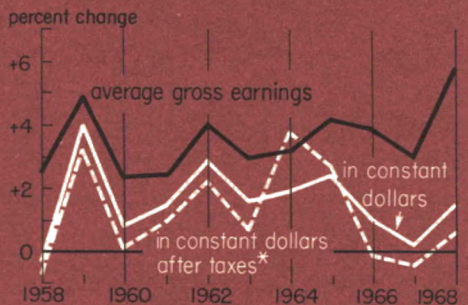
Many families have more than one person earning income from wages and salaries. The proportion of married women holding jobs has risen almost every year for the past decade—a trend encouraged by the ready availability of jobs, rising wages, and the use of labor-saving equipment in the home. Of the 27 million women working early this year, 16 million were married and living with their husbands. Family income is also often supplemented by earnings of unmarried children working at jobs ranging from baby sitting or yard work to full-time positions.

Total civilian employment has increased 1.5 million or more every year since 1963. In the previous five years, the annual increase in employment averaged less than 1 million. Since 1965, further gains in employment have come partly from the rise in the proportion of non-institutional population participating in the labor force. Under these conditions, suitable jobs have been available to many people in addition to the male head of the household.

Family income is also supplemented by earnings from property—from rents, interest, and dividends—and from pensions and other social-welfare benefits, as noted in the definition of personal income. These amounts are included in the estimates of total personal income but not in the estimates of production worker earnings.

Neither personal-income figures nor the earnings of production workers include income from capital gains or transfers from other individuals. Gifts and legacies (forms of transfer payments) are channels through which spending power of many families, especially young families, is increased.

**But real spendable earnings** of production workers appear to have merely regained the 1965 level




*Workers with three dependents whose incomes are derived entirely from one job and use the optional standard deductions in computing their income taxes.

### Government services

The level of living has risen since 1965, despite the increase in the share of total goods and services purchased by the goverment. Government purchases increased from 20 percent of the gross national product in 1965 to 23 percent in 1968. The federal government's share of total purchases rose from 10 percent to 12 percent, mainly because of rising defense costs. State and local governments' share rose from 10 percent to 11 percent, mainly for schools and welfare pro grams.

If government expenditures had stayed at the 1965 proportion, another $26 billion of output would have been available for private purchases last year. If consumption expenditures had risen by this amount, they would have been 5 percent higher than they were.

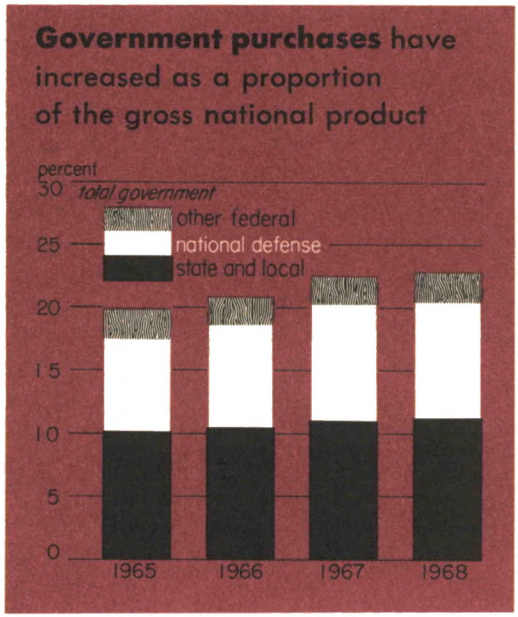
None of the usual data on consumer income or spending allows for the benefits consumers derive from government outlays. In theory at least, all government expenditures are proxies for individual expenditures on functions that cannot be handled as well, if at all, by individuals.

In terms of spending, the largest single activity of the federal government is defense, on which the security of the entire population depends. In addition, people benefit directly or indirectly from government services provided in the form of education, health, research, transportation, agricultural improvements, recreation, and aid to the poor. The efficacy of many government programs can be argued by at least some. But provision of resources for these programs in years when consumers were increasing their direct purchases of goods and services provides an eloquent commentary on the vitality and growth capability of the American economy.

### Future income growth

If business recessions and all-out wars are avoided, per-capita consumer buying power will probably continue to rise, even accelerate. The share of total output going to defense has stopped rising. The current increase in capital expenditures will help ensure further increases in output per manhour. The population is growing only half as fast as it was ten years ago, and the proportion of people in prime working ages is rising.

Recent growth in real income has been achieved despite a steady increase in leisure, principally in the form of longer vacations and earlier retirements. Some of the nation's potential economic growth will undoubtedly continue to be foregone so that workers can have more leisure time—another factor not included in income.




While there is no question that living standards for most people have risen, it is always true, of course, that the real purchasing power of many individual families does not keep pace with increases in prices and taxes. The uneven impact of inflation is a major reason for vigorous efforts to moderate the rise in prices. Current fiscal and monetary policy is directed toward achieving that result without seriously hampering growth of production and, therefore, real buying power.

## Film strip on **Truth in Lending**—Regulation Z

Individuals and firms regularly extending credit to consumers will be subject to the new Truth in Lending law, beginning July 1. A sound film strip explaining provisions of this law and the related "Regulation Z" has been prepared for showing to creditor groups. The 15 minute film can be borrowed from the Federal Reserve Bank of Chicago or its Detroit branch or purchased from the Board of Governors in Washington for $10.

The film strip can be used with automatic sound projectors taking 35mm film and a 33⅓-rpm record or with standard film-strip projectors and a separate record player. These are available in most areas from the usual sources.

# Larger farms — a continuing trend

The sheer force of technology may alter the American farmer's traditional role as owner, manager, and laborer in his own business. It could also force further substantial changes in the financing of farms and the practices of banks and other lending institutions extending credit to farmers.

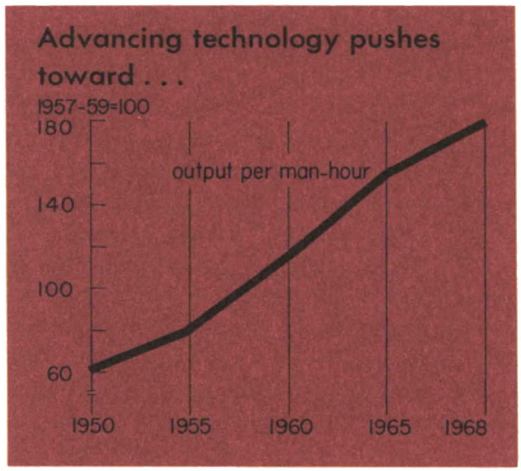
The long-standing trend toward larger and fewer farms primarily reflects the persistent pressure of advancing technology on the acreage needed for an efficient farm. And as the size of farms—and the investment per farm—increases, financing arrangements that are adequate today may not serve the needs of agriculture in the future.

A number of researchers have undertaken in recent years to peer into the future to see what may be in store for the country in terms of number and size of farms. While such efforts can yield only tentative results at best, they nevertheless provide broad clues that managers of financial institutions can use in assessing their own prospects and plans.

The number of farms in the United States dropped from almost 4 million in 1960 to about 3 million in 1968. During that time the size of the average farm grew substantially—whether its growth is measured by total assets, acreage, or gross sales. Total assets per farm topped $100,000 last year, compared with $50,000 in 1960. Average acreage per farm climbed to 369, as against less than 300 at the start of the decade. And gross sales per farm about doubled, reaching some $16,000.

This trend toward fewer but larger farms has long been familiar. But the change varies widely by area and type of farming, clouding the outlook for the extent of change and time required for agriculture to reach some sort of equilibrium. Farms in the Seventh Federal Reserve District, for example, average around 203 acres. Farms have much larger acreages in areas where cattle and cotton are important and much smaller acreages in areas where tobacco and vegetables are the principal crops.

But the number of acres in a farm does not necessarily gauge its size. In 1964, for example, there were nearly 20,000 farms in the United States under 100 acres but with gross sales of more than $40,000. Of these, nearly 1,000 had land and buildings valued at more than $500,000.




Total assets is a useful measure in some cases. But it is not meaningful where much of the assets are in forms, such as expensive residences or extensive recreational facilities, that do not contribute to the production of agricultural commodities.

Annual gross sales is used more widely as

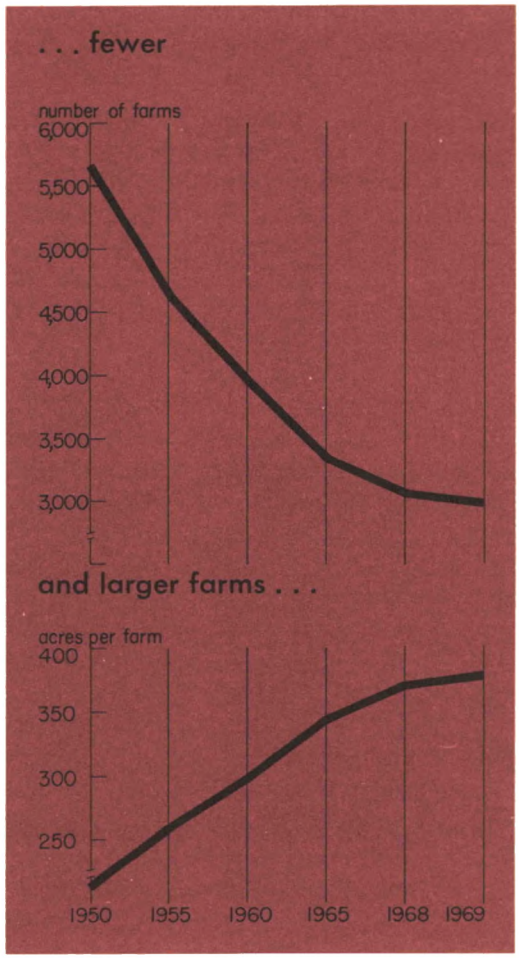
a measure of farm size than acreage or assets, though it, too, has shortcomings. Where a large percentage of sales reflects the cost of purchased inputs, such as feeder animals, gross sales tend to overstate the size of the operation relative to other farms—that is, the value the farm adds in the production process is relatively small per dollar of sales.

The average acreage of farms with high gross sales has declined in recent years, even though the number of such farms has greatly increased. In 1959, the average size of farms with sales of more than $20,000 was 1,338 acres. In 1964, the average size of such farms had dropped to 1,134 acres, This shift reflected the rapid increase in specialized farms, such as livestock feeding farms.

The increased production per acre resulting from technological improvements also boosts gross sales per farm, even when other measures of size do not change. Change in prices of commodities is another factor affecting gross sales. The average corn yield in Illinois, for example, increased from 62 bushels per acre in 1959 to 89 bushels in 1968. During that time, average corn prices in Illinois declined from $1.13 a bushel to about $1.02. Despite lower prices the larger yields would have raised gross sales on a 230-acre farm $4,000 in ten years.

Another useful measure of size is total manhours (or man-years) of labor used on a farm. But this measure, too, has drawbacks because of the great variations in labor efficiency.

"Value added"—gross sales less the cost of purchased materials—is possibly the most precise measure of farm size. Widely used in other types of businesses, this measure has probably not come into general use in agriculture because in the past farmers bought little of the materials going into their operations.




### Some projections

Recent studies of trends in farm size have focused largely on number of acres as the measure of size but with some attention to other measures, especially gross sales. Each study, of course, is done somewhat differently; consequently, the conclusions differ. But the differences themselves—in underlying assumptions and final results—are interesting. One reason is that several of the studies have used the same target date—1980.

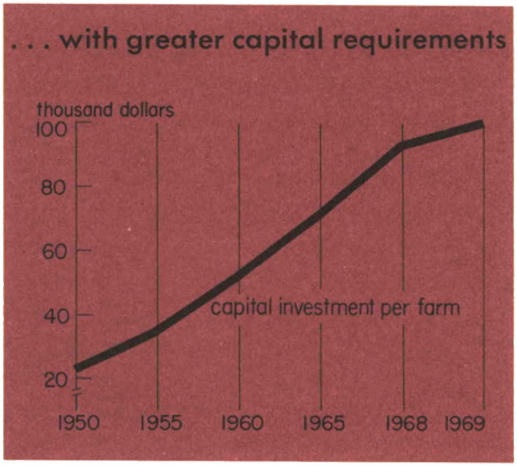
A simple estimate of the prospective number of farms can be made by extending the trend of recent years. The number has declined about 3 percent a year for the last five years, and the average acreage per farm has increased about 2½ percent a year. Extension of these trends to 1980 would indicate a reduction in the number of farms to about 2 million, nearly 1 million less than now. It would also indicate an increase in average farm size to 525 acres, an increase of about 40 percent. If production per acre continues to increase at about the same rate as recent years and prices of farm products remain at about current levels, average gross sales per farm would be around $28,000 in 1980.

A detailed study by Rex Daley, an economist with the U. S. Department of Agriculture used similar assumptions and obtained similar results.[1] Daley, however, projected gross income and several other measures in addition to number and average size of farm for six classes of farms based on gross sales.

He showed an estimated 2.1 million farms in the United States in 1980. Of these, the upper third had more than $20,000 in annual gross sales and the lower third had sales of less than $2,500. Altogether, farms were indicated to average about 538 acres and have gross sales of around $27,000 in 1980.

By chaining his estimates forward at five-year intervals, he concluded that the number of farms might level off about 1990 at around 1.5 million. The total land in farms was assumed to remain about the same.

While Daley assumes continuation of current trends, he suggests that if all farms were organized like the farms with sales of more than $40,000, the projected production of




agricultural commodities needed in 1980 could be produced on about half a million farms. These farms would average about 1,800 acres and require 3 to 3.5 men full-time to operate them.

### Weight of new technology

Another recent study, conducted by Earl Heady, an economist at Iowa State University, predicts a still faster decline in the number of farms—to around 1.5 million in 1980.[2] This projection—which places somewhat greater emphasis on more rapid adjustments to new technology—implies an increase in average size in 1980 to about 740 acres. Even so, the author considers these estimates conservative since he expects the rate of technological progress to accelerate even faster than estimated for his study, which would intensify pressures to substitute capital for labor.

He expects faster adoption of cost-cutting technology to be spurred, not only by rising wages but also by greater awareness of avail-

[1]Rex Daley, Agriculture: "Prospective Growth and Structural Change," *Rural Poverty in the United States* (President's National Advisory Commission on Rural Poverty, 1968).

[2]Earl Heady, *U. S. Agriculture in 1980*, CAED Report 27 (Iowa State University, 1966).

able technology. Competition among suppliers will no doubt stimulate efforts to capture positions in the tremendously large market for farm equipment and supplies. New products and services intended to reduce farmers' costs and increase their production will be researched, developed, and promoted. And with larger farms, farmers will be more sensitive to both costs and new technology.

A further increase in the pace of development and application of new technology also implies more specialized farms. Because most new machinery, equipment, and buildings involve long-term and rather sizable investment and are often designed for specific functions, they tend to be too expensive to use unless the investment can be spread over greater output. This only serves to intensify the push toward specialization of farms and, hence, larger farms.

Another factor this study points out as favoring faster growth in average size of farm is the expected retirement of many of the older farmers over the next ten years. More than a third of the farm operators are at least 55 years old. The education and the ability needed by those who succeed these farmers will be much greater. To earn satisfactory incomes, these operators will need larger farms.

### Correcting imbalances

Another study focuses only on Midwest agriculture.[3] The authors of this study set for themselves slightly different objectives and used different estimating procedures. They undertook to estimate for 1959, the last year for which detailed census data were available, and to project for 1980 the number and size of farms (and a number of other measures)

**Continuation of current trends point to a sharp reduction in number of farms (Daley study)**

| Size of farm by sales (thousand dollars) | 1965 (thousand farms) | 1980 (thousand farms) | Change (percent) |
|---|---|---|---|
| Over $40 | 170 | 335 | + 97% |
| 20-40 | 300 | 355 | + 18 |
| 10-20 | 520 | 370 | − 29 |
| 5-10 | 525 | 225 | − 57 |
| 2.5-5 | 450 | 160 | − 64 |
| Under 2.5 | 1,410 | 695 | − 51 |
| *Total* | 3,375 | 2,140 | − 37 |
| **Per Farm** | **1965** | **1980** | **Change** |
| Acres | 341 | 538 | + 58% |
| Labor used (manhours) | 2,364 | 2,234 | − 6 |
| Gross income (millions) | $13,315 | 27,050 | +103 |
| Production assets | $62,270 | 112,854 | + 81 |

in the North Central states if agriculture in those states was organized for optimum economic efficiency.

The test of efficiency was production at minimum cost, a volume of output that would sell in the market at prices providing reasonable returns to labor and covering the cost of capital, and a mix of commodities geared to demands. These would be the conditions existing when resources were used with optimum efficiency.

The characteristics of agriculture in 71 subregions of the North Central states were identified as they existed in 1959. These benchmark data were used in measuring the imbalances of agriculture in 1959 and estimating changes through 1980. To approximate conditions of minimum-cost agriculture, the authors identified the most efficient and best organized farms in each area and reorganized the farmland in each subregion into farms with similar characteristics.

The effect was to sharply reduce the number while vastly increasing the size of farms in the region. The number of farms dropped

[3] *Efficient Organization of the Farm Industry in the North Central Region of the United States in 1959 and 1980* (North Central Regional Research Publication No. 182).

39 percent and acreage per farm rose 64 percent. Capital per farm doubled and gross income more than tripled.

So organized, these farms produced more than twice the actual output in 1959—which had been more than demanded at prevailing prices. As a result, the authors further reorganized each subregion to equate total production with market-clearing demand. This was done by decreasing the input of capital and labor per land unit until production dropped to market-clearing levels.

The result was a further reduction in the number of farms—to less than half that under the minimum-cost reorganization and to less than a third of the actual number existing in 1959. Under these conditions, less than a third of the 1959 labor requirements was needed and capital requirements were reduced to slightly less than half the 1959 total.

The basic procedures used in estimating changes in farm characteristics resulting from the hypothetical minimum-cost and market-clearing reorganizations in 1959 were also

## **Efficient organization** of agriculture would likely result in more rapid and extensive changes

| North Central Region[a] | Number of farms | Land (thousand acres) | Land and buildings[b] (million dollars) | Labor (thousand months) | Capital (million dollars) | Gross production (million dollars) | Price level (1959 = 1.00) |
|---|---|---|---|---|---|---|---|
| **1959** | | | | | | | |
| Actual | 1,171 | 367,350 | $52,720 | 19,002 | $21,599 | $10,041 | 1.00 |
| Reorganization | | | | | | | |
| Minimum-cost | 741 | 367,350 | 52,720 | 14,949 | 28,571 | 20,389 | 1.00 |
| *Change from actual* | *−39%* | 0 | 0 | *−21%* | 32% | *103%* | — |
| Market clearing | 306 | 367,350 | 52,720 | 6,420 | 12,182 | 9,141 | .97 |
| *Change from actual* | *−74%* | 0 | 0 | *−66%* | *−44%* | *−9%* | *−3%* |
| **1980** | | | | | | | |
| Projection[c] | 322 | 356,350 | 51,315 | 4,767 | 11,662 | 15,986 | .66 |
| *Change from actual* | *−73%* | *−3%* | *−3%* | *−75%* | *−46%* | *59%* | *−34%* |

| | Per farm | | | | |
|---|---|---|---|---|---|
| | Land (acres) | Land and buildings[b] (thousand dollars) | Labor (months) | Capital (thousand dollars) | Gross production (thousand dollars) |
| **1959** | | | | | |
| Actual | 314 | $ 45.0 | 16.2 | $18.4 | $ 8.6 |
| Reorganization | | | | | |
| Minimum-cost | 515 | 740 | 20.8 | 39.9 | 27.5 |
| *Change from actual* | *64%* | *64%* | *28%* | *116%* | *220%* |
| Market-clearing | 1,200 | 172.0 | 20.8 | 39.9 | 29.9 |
| *Change from actual* | *282%* | *282%* | *28%* | *116%* | *248%* |
| **1980** | | | | | |
| Projection[c] | 1,106 | 159.0 | 14.8 | 36.2 | 31.0 |
| *Change from actual* | *252%* | *253%* | *−9%* | *96%* | *260%* |

[a]Includes Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

[b]Value at actual 1959 land price.

[c]Minimum-cost and market-clearing with productivity increase of 1.75 percent compounded annually.

used in preparing projections to 1980.

Characteristics of the 1959 farm industry reorganized to meet minimum-cost and market-clearing goals were similar to those projected to 1980, except that the labor per-farm in the later year was much lower, reflecting the continued adoption of new labor-saving technology. Nearly all the adjustment in number and size of farms was needed to correct imbalances in the costs of resources and level of farm production existing in 1959.

The optimum size farm in this region in 1980 is described as averaging about 1,100 acres—more than twice the 1959 observed acreage. This implies about a 70-percent decline in the number of farms and is roughly equivalent to the average annual rate of decline observed in the past decade.

If the imbalances in agriculture are similar for the nation as a whole—and they probably are—nationwide correction of a similar magnitude would shrink the number of farms in the United States more than 2 million by 1980—to about 860,000.

But to achieve that degree of efficiency in the organization of agriculture seems quite unlikely. No industry ever raises all its firms simultaneously to the level of efficiency achieved by the most efficient. Efficiency is curtailed by the limited knowledge of entrepreneurs, lack of mobility of resources, goals other than optimum efficiency, and public policies aimed at other than efficient use of resources.

These estimates nevertheless serve to point up the overcommitment of resources in agriculture. They indicate the economic forces pressing for continued adjustment in farm size and number of farms. Future change in the structure of agriculture does not depend

**Similar changes** indicated for Seventh District states under assumed conditions

| | 1959 | | | |
|---|---|---|---|---|
| | | Reorganization | | |
| | Actual | Minimum-cost | Market-clearing | 1980 projection† |
| *Illinois* | | | | |
| Number of farms | 123,328 | 83,631 | 30,981 | 39,580 |
| Acres of land* | 232 | 342 | 924 | 704 |
| Months of labor* | 16.4 | 21.1 | 21.1 | 14.4 |
| Value of capital* | $20,985 | 46,976 | 48,723 | 40,354 |
| Gross production* | $11,566 | 34,820 | 41,472 | 39,311 |
| *Indiana* | | | | |
| Number of farms | 83,931 | 47,078 | 16,471 | 20,330 |
| Acres of land | 194 | 345 | 987 | 745 |
| Months of labor | 15.4 | 23.0 | 23.4 | 14.3 |
| Value of capital | $17,014 | 52,661 | 52,814 | 41,315 |
| Gross production | $ 8,742 | 35,666 | 41,687 | 40,210 |
| *Iowa* | | | | |
| Number of farms | 154,329 | 91,368 | 41,046 | 49,086 |
| Acres of land | 213 | 360 | 801 | 659 |
| Months of labor | 15.8 | 20.0 | 20.0 | 14.6 |
| Value of capital | $23,309 | 45,565 | 45,134 | 34,262 |
| Gross production | $ 9,030 | 28,596 | 31,492 | 31,794 |
| *Michigan* | | | | |
| Number of farms | 65,042 | 41,320 | 16,435 | 18,524 |
| Acres of land | 175 | 276 | 693 | 551 |
| Months of labor | 17.1 | 23.2 | 23.7 | 14.5 |
| Value of capital | $13,712 | 33,463 | 33,494 | 25,932 |
| Gross production | $ 7,235 | 24,740 | 27,094 | 28,804 |
| *Wisconsin* | | | | |
| Number of farms | 106,691 | 79,077 | 33,486 | 37,426 |
| Acres of land | 179 | 241 | 570 | 478 |
| Months of labor | 16.7 | 22.0 | 21.9 | 17.4 |
| Value of capital | $18,440 | 30,732 | 30,875 | 29,199 |
| Gross production | $ 7,206 | 19,684 | 21,425 | 23,075 |

†Assumes productivity increase of 1.75 percent compounded annually. *Per farm.

on the development of new technology. Such development will only further intensify the need for change.

### Magnitudes differ but direction clear

Estimates of future developments are hardly ever accurate. But they can provide signposts that point up the general outline of particular developments at some juncture in the future, such as 1980, even though different analyses yield somewhat different results. In agriculture, experience has shown that mere extension of past trends often tends to underestimate the magnitude of changes. Estimates, on the other hand, that assume substantial institutional changes—such as elimination of government programs, greatly improved availability of capital, and rapid increase in quality of management—may tend to overestimate the rate of change.

While the magnitude of future change cannot be clear, there is clear agreement recent trends have not run their course. Many farms are still too small either to use machinery and labor efficiently or to provide operators with satisfactory incomes. And, as new technology and managerial techniques develop, the economic pressures for larger farms become ever stronger.

Even by the lowest estimates reported here, the changes indicated for agriculture by the end of the next decade pose numerous questions. It is already difficult for farmers to build holdings to adequate size, relying on funds generated through the business and traditional borrowing. This problem probably will intensify and it is a problem that will concern lenders serving agriculture as well as farmers. Financing practices may have to undergo substantial adjustment if they are to serve the needs of farmers, as indicated by the changes in prospect for the next decade. The adjustments may very well involve changes in institutions as well as financing practices. More reliance may need to be placed on less traditional practices, such as leasing, integration, contracts, incorporation, and other arrangements yet to be devised, to accommodate the capital needs of individual farmers in the agriculture of 1980.

# Personal saving and inflation

Personal saving, while generally at a high level, has been declining in recent months as a proportion of disposable personal income. Personal saving by households was more than $40 billion (annual rate) in the last half of 1967 and the first half of 1968—7.5 percent of disposable personal income. In the second half of last year, it averaged about 6.5 percent. And preliminary data for the first quarter of this year shows a further decline in the proportion to 5.8 percent.

The decline in the ratio of saving to disposable income since mid-1968 was enough to neutralize most of the impact of the 10-percent surtax on consumer spending. The surtax had been expected to moderate the growth in consumer spending soon after it became effective in midyear. But instead, the rate of personal saving fell, allowing continuation of the rapid rise in consumer spending, even though after-tax income was constricted.

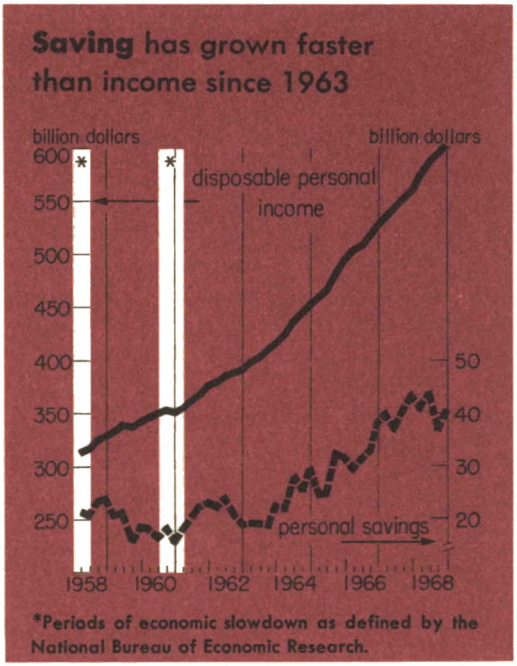
Explanation of these developments seems

to lie in the larger than expected increase in consumer income and the uncertainty created by accelerating inflation.

### Saving accelerates, then slows

Saving relative to income rose at an increasing rate from 1963 to 1968. Between 1958 and 1963, disposable personal income increased at an average annual rate of 4.9 percent while personal saving remained fairly stable at about $20 billion. Therefore, saving declined as a proportion of income. In other words, as spendable income rose, an increasing proportion went for consumer items.

But in 1963, a shift set in with the amount of personal saving rising faster than disposable income. From the end of 1963 to the fourth quarter of 1967, disposable income increased at an average annual rate of 7.8 percent. Personal saving suddenly began to grow, increasing at an average annual rate of 19 percent. As a percent of disposable income, personal saving rose from an average of about 5 percent in 1958-63 to about 7.4 percent in 1967. In 1968, personal saving slowed while disposable income continued its rapid rise.




### Developments affecting saving

The proportion of disposable income people save is influenced by several factors, including current and expected incomes, interest rates, and such demographic factors as age and marital status. But the age distribution of the population does not change over short periods. Nor do habitual saving practices. In the short run, changes in the saving ratio largely reflect changes in current income and expectations of future income and prices.

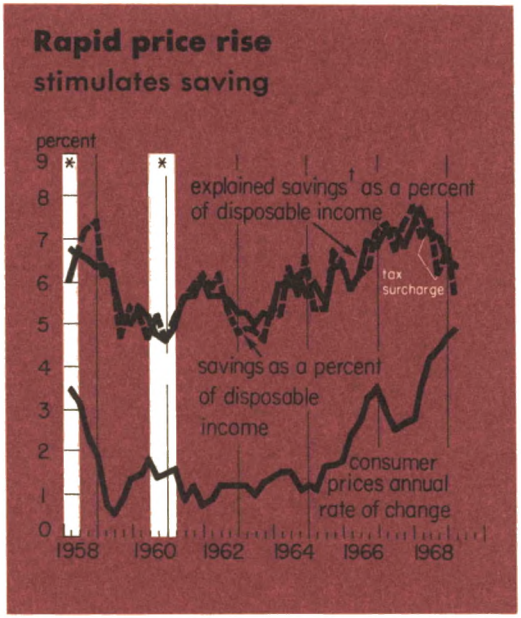
A person whose income has been rising steadily is apt to expect the rise to continue. This confidence fosters an optimistic view that (other things being equal) can stimulate spending and reduce the sense of need to "save for a rainy day." But it also appears that the opposite might be true if rising incomes were accompanied by a quickening pace of price increases.

An increase in the rate of inflation apparently can cause people to become more uncertain of the future purchasing power of their income and savings. When this happens, they may step up their saving relative to income in an effort to preserve their level of consumption in the future.

Sharply rising prices can also change the form in which additional savings are held. Concern over the erosion of their purchasing power may lead people to shift their savings from financial assets yielding fixed returns, such as savings accounts, to those with variable return, such as common stocks.

### Some evidence

It has been customary to assign interest




†Explained saving represents the saving ratio predicted by the interaction of increases in real disposable income (nominal disposable income adjusted for price increases), an annual rate of price inflation of 2.5 percent or more, and the saving ratio for the previous quarter. Of several tested, the equation form that gave the best results in terms of minimum deviation between actual and predicted saving ratios was:

$$S/Y = 2.49 + 0.455\,\Delta Y/Y + 0.756\ \text{Prices} + 0.464\,(S/Y)_{-1}$$

where S equals personal savings; Y, disposable income; $\Delta Y/Y$, percent increase in real disposable income (disposable income seasonally adjusted); Prices, a "dummy variable" receiving a value of one for annual rates of increases in the consumer price index of 2.5 percent or more and zero for increases less than 2.5 percent; and $(S/Y)$, the saving ratio for the previous quarter. The equation was fitted to the 1958-68 period by using quarterly data. Its "fit," measured by the adjusted coefficient of determination, is 0.727—that is, about 73 percent of the variability of the saving ratio is explained by the equation's variables. The explanatory importance of the price variable was indicated by omitting it. The equation yielded a coefficient of determination of only 0.592, or 59 percent. This equation form did better than others using the stock of liquid assets at the beginning of the quarter, permanent income, previous peak spending, and alternate lag relationships.

*Periods of economic slowdown as defined by the National Bureau of Economic Research.

rates an important role in determining the level of saving. And saving as a percent of income has moved roughly apace with movements of short-term interest rates since 1963. But efforts to measure the effect of interest rates on saving apart from the effect of income have not yielded consistent results.

One study has even indicated that increases in interest rates caused consumers to save a smaller proportion of disposable income and suggested that this was because the greater income from interest reduced the need for saving. On balance, however, the evidence suggests that rising interest rates induce greater saving but the effect is no more important than the effect of rising income.

There are also indications that price inflation influences the rate of personal saving. If a person expects prices to go up, it seems that he would tend to accelerate his purchases, at least of those things for which prices are expected to rise. But if a person wanted to maintain the purchasing power of his savings, one way to do it would be to increase his saving as prices rose or were expected to rise. In that event he might choose to reduce spending and increase saving relative to current income.

Surveys conducted by the University of Michigan Survey Research Center since 1966 have shown that a rising proportion of consumers expected price increases and planned to postpone purchases of consumer durables in anticipation of rising costs of living. Asked what they would do in defense against price increases, consumers responded more often that they would reduce purchases or postpone buying than that they would buy in advance of price increases.

However, there are exceptions to the general picture suggested by these responses. In the summer of 1967, for example, automobile manufacturers announced higher prices of

cars to be introduced that fall, giving rising costs of labor and materials and the addition of "safety devices" as the reasons. When asked if it was a good time to buy a new car, many respondents in the Michigan survey answered that it was, citing announced higher prices for coming models.

Apparently, people with firm plans, involving a large expenditure, such as for a house, a car, or a major household durable, are sensitive to prospective price changes. A highly publicized announcement that prices of the goods they intend to buy will be increased causes them to buy sooner rather than later.

But even though living costs are rising, consumers apparently do not attempt to buy more of everything before prices rise further and, consequently, reduce their ratio of saving. Most prospective price changes are not announced in advance. Consumers are often hardly aware of some price changes. Furthermore, many items of daily consumption do not store easily and must be bought at about the rate of their consumption.

The saving ratio is apparently also affected by the belief that prices may increase more than income. The Michigan survey showed that since 1966 a growing proportion of respondents held this view, even though most of them had recently made income gains that exceeded the rise in consumer prices. A comparison between respondents expecting only moderate price rises and respondents expecting sizable increases showed that the group expecting sizable increases often felt worse off and, therefore, were likely to defer purchases. It would seem, then, that the inflationary psychology of consumers has not been the traditional one of going from "money to goods" but one of going from "goods to money."

Statistical analysis of the available evidence indicates that in 1963-67 greater than expected increases in purchasing power and the quickening rise in consumer prices were major factors affecting the upward movement in the ratio of saving to disposable personal income. Even though changes in disposable income appear to have been the major factor affecting the saving ratio, it appears significant that the relationship between the rate of change in consumer prices and the saving ratio began strengthening in 1966, the year consumer prices started rising at a decidely faster rate.

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