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POST-WAR INTERRELATIONS BETWEEN AGRICULTURE  
AND BUSINESS

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MANY GENERALIZATIONS have been uttered in the United States in the past ten years concerning the relation between agriculture and business. The most common generalization is that the national welfare depends upon agricultural prosperity. Another view, not as commonly expressed but probably as widely held is that agriculture has already declined to a point where it is no longer a major factor in our highly industrialized economy. It is the purpose of this paper to present certain selected facts bearing on the complex economic interdependence of agriculture and business in the United States which gave rise to these diverse views.

These facts, we shall find, indicate, first, that the prosperity of only certain industries is intimately dependent on the farmer's financial condition and that the welfare of a larger section of industry is dependent more on the farmer's output than on his income; second, that the variations in the industrial and financial activity of the country are real and important elements in the farmer's well being; and third, that the factors which make for agricultural depressions, particularly over-production, may have a temporary stimulating effect on national prosperity and the factors which give the appearance of agricultural prosperity, such as relatively high farm product prices, may help to bring on industrial depression.

Out of the processes of farm production, arises one set of interrelationships between farmers and those industries which supply certain goods and services such as fertilizer, feed, equipment and credit. Another set arises from the process of exchanging the farmer's net income for the necessities of life such as food, clothing and household goods. Many of these enterprises went to pieces when the great price deflation and business depression of 1920-21, reduced the agricultural cash income in the United States from the very high level of nearly 13 billion dollars in 1919-20 to only 7 billion dollars in 1921-22. Since then, as we shall point out presently, these industries have shared in the agricultural improvement and in the year to year variations in farm income.

For these and for the many allied industries and interests which supply agriculture with commodities and services for use both in production and in the farm home, it may be said without qualification that their welfare rises and falls with the ups and downs in the farmer's buying power.

In the marketing of the farmer's product there are engaged a number of enterprises which, unlike those already referred to, do not depend directly on the farmer's buying power, but rather on the volume of his production. Among these are the country elevators and warehouses, the railroads, the commission men, the speculative exchanges, the flour mills, the packing houses, the cotton mills, the wholesalers, retailers and exporters. It is a general characteristic of these intermediaries between the farmer and the consumer that it is to their interests primarily to handle as large a volume of traffic as possible. Only incidentally are they concerned with the farmer's prices or the farmer's financial rewards for large crops. In fact, for some, particularly the processors of farm products, or manufacturers whose raw materials are partly agricultural, there is a distinct advantage in low agricultural prices and large volume. Illustrative of these general facts we shall find that in the past decade agriculture has in certain years contributed substantially toward the maintenance of industrial activity although receiving for that contribution a niggardly reward.

In addition to those industries whose interests are promoted by large output at low prices and adversely affected by small output at high prices, there are all of the other enterprises and consumers in general who benefit from abundant food and clothing materials at low prices, for relatively low living costs release a greater share of consumers' income for non-agricultural goods. Illustrating this fact, it will be pointed out that the relatively low agricultural prices of the first half of the post-war period which contributed toward our recent prosperity were succeeded by relatively high agricultural prices as a result of a rise in agricultural prices and of a decline in non-agricultural prices. This relative rise in agricultural prices appears to have marked an end of a period of prosperity just as similar shifts appear to have done in the past 55 years.

In the agricultural-business interrelationships, we have not only the dependence of some on the farmer's income, and of others on his output, but also the reverse, the dependence of agriculture on general industrial prosperity. For, inasmuch as the bulk of our

farm production is sold in the United States, the condition of the domestic market, or rather the buying power of consumers as a whole, is a factor in the farmer's prices and income. The farmer is concerned with the domestic demand for his products just as certain industries are concerned with the farm demand for their goods. Furthermore, industrial conditions affect the prices of goods and services which farmers buy for use on the farm or in the farm home.

The effects of general business activity on the farmer's gross income operating through the condition of domestic demand were most drastically felt in 1920-21 and in 1929-30. In these extreme years there were some offsetting influences such as lower farm wages brought about by large numbers of unemployed seeking jobs on the farms and lower prices of goods bought by farmers. But they have been of minor importance compared with the effects of business depressions on agricultural incomes.

Let us now examine the facts which give rise to these conclusions.

#### EFFECT OF AGRICULTURAL INCOME ON THE PROSPERITY OF CERTAIN INDUSTRIES

The dependence of certain industries on agricultural income can readily be illustrated with data relating to the fertilizer, farm implement and automobile industries as representative of those who sell goods for use in farm production.

The income from farm production in any given year in a large measure determines purchases in the following season. Stated differently, farmers tend to buy on the basis of income already earned rather than on prospective incomes. The fertilizer industry finds the farmer a good prospect or a poor one depending on what the harvest has brought. This is obvious when the annual gross money income from the cotton crops are compared with the following year's expenditures for fertilizer by farmers in the cotton states. The unusually high farm returns of 1919 brought unusually high expenditures for fertilizer in 1920 and the greatly reduced incomes from the 1921 and 1926 crops resulted in greatly reduced fertilizer purchases in 1922 and 1927 respectively. On the average, fertilizer expenditures in the South amount to about one-tenth of the cash income from the cotton crop (figure 1).

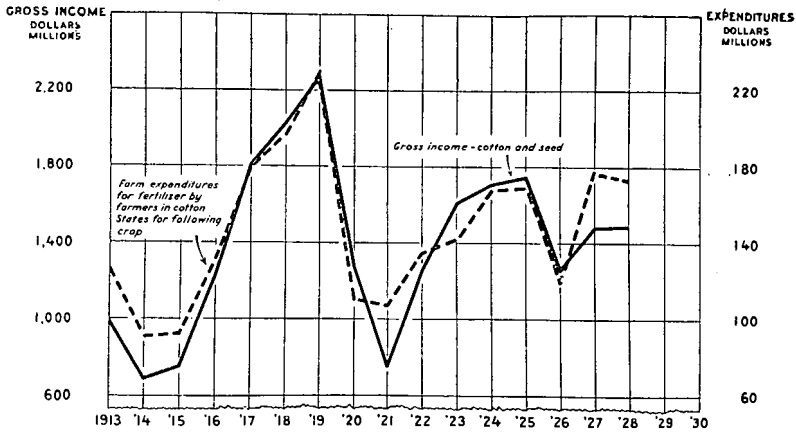


FIGURE 1. RELATION BETWEEN GROSS INCOME FROM COTTON AND FERTILIZER EXPENDITURES IN COTTON STATES FOR THE FOLLOWING CROP

*The welfare of the fertilizer industry is very closely related to farm cash returns from the cotton crop. On the average about one-tenth of the returns from the cotton crop represents the expenditures for fertilizer in the cotton-producing states in the following year.*

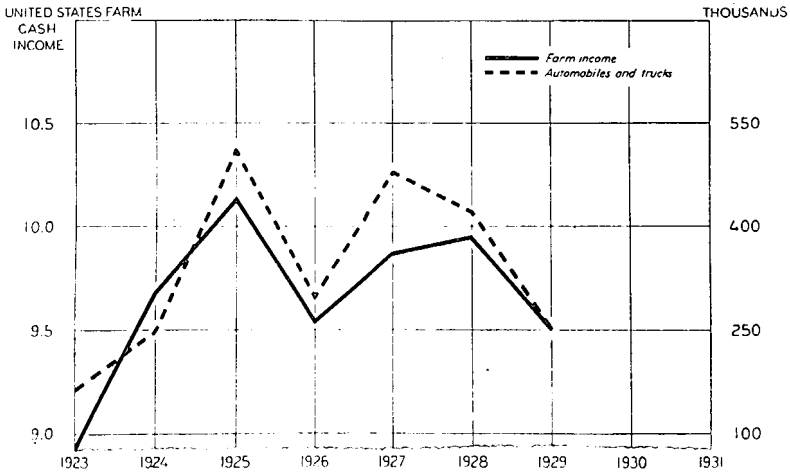


FIGURE 2. UNITED STATES CASH INCOME FROM FARM PRODUCTION AND ANNUAL INCREASE IN NUMBER OF AUTOMOBILES AND TRUCKS ON FARMS

*Up to January, 1930, there has been an annual increase in the number of automobiles and trucks on farms, but the rate of increase has varied with the cash income from farm production. The cash income for the crop years beginning in the years 1923 to 1929 inclusive are here compared with changes in numbers between one January and the next.*

Similarly a part of the farm implement industry is dependent on the returns from the grain crops. Since 1921 for example, there has been a very high correspondence between the income from the grain harvest of one year with the deliveries of farm implements and vehicles in the following year.

Purchases of automobiles and trucks by farmers have also in recent years reflected farm incomes. In the past 10 years there has been a marked increase in the number of automobiles and trucks on farms which has been greater than the improvement in farm income. Although the process of mechanization has gone on at a very rapid rate, that rate has been accelerated in years of good incomes, and retarded in years of reduced incomes. Thus, after the improved returns from the 1924 and 1925 farm production there was a greater increase in automobiles and trucks on farms at the end of the year than after the reduced incomes of 1926 and 1929 (figure 2).

Such direct influences of farm income on the industries immediately concerned with the farm market, represent also indirect effects on others not in direct contact with agriculture. For example, the activity of the farm machinery industry, resting as it does largely on the money income of domestic agriculture, determines the earnings of its employees who in turn are the consumers of products of other industries. A similar indirect effect on general business is passed on by those enterprises engaged in handling, financing, packing, milling and exporting the annual farm output, for on them depend many other industries.

Agriculture exerts still another indirect effect on general business through its influence on the cost of food and clothing of the city as well as country consumers, for the market for non-agricultural goods is increased as the share of the consumer's income spent for food and clothing is reduced, and contracted when higher agricultural prices require a larger portion of the consumer's budget for food and clothing. Although this indirect influence on business is too complex for quantitative measurement, its importance can be sensed from the fact that about half of the money value of retail trade carried on in the larger cities of the East and West is in agricultural products of food and clothing. Assuming a total volume of retail trade of about 40 billion dollars of which food represents one-third, a rise in the retail level of food prices alone of 10 or 15 per cent, such as took place between 1921-23 and

1928-29 represents a greater contraction in purchasing power for non-agricultural products than takes place in the course of an ordinary business depression, assuming of course that consumers do not curtail the quantities they purchase.

#### RELATION OF AGRICULTURAL OUTPUT TO BUSINESS PROSPERITY

The industries engaged in the distribution and processing of farm products are concerned more with the volume of farm output than with the money value of farm income. This distinction between output and income is a necessary one because large output may or may not mean large income. A large crop of wheat may bring a large income as, for example, in 1924. In that year the effect on both the industries dependent on the farmer's income and those dependent on the volume of traffic was identical. Or a large crop of wheat may bring a low income as it did in 1928, when the railroads and middle men only were favorably affected. Large crops of potatoes and cotton usually mean smaller incomes and in those instances the effect of income on business is not identical with the effect of volume.

Among the distributors of farm products whose prosperity rises and falls with farm output rather than with farm income the railroads may be cited as the outstanding example. Ordinarily, with freight rates practically unchanged from year to year, revenue tends to be determined by the volume of traffic handled. In the 10 years from 1920 to 1929 inclusive, the marketings of farm products have been relatively heavy in years when freight from other sources declined. This may be inferred from a comparison between the annual variations in manufacturing output and in crop marketings in the past 10 years (figure 3). We find here a very definite inverse correlation. The heaviest movements of farm products occurred in 1921, 1922, 1924, 1927 and 1928. From the standpoint of transportation and industry, these large volumes were well timed for in these years they served as partial offsets to business activity below normal. Similarly the lighter movement of farm products in 1920, 1923, 1925 and 1929 coincided with business activity above normal.

The physical contribution of agriculture to the business cycle in recent years may be further observed by differentiating between those manufacturing industries which use agricultural and those which use non-agricultural products. If in the former we include



the textile, food and leather industries and in the latter such basic industries as iron and steel, automobiles, cement, and so forth, markedly different fluctuations show up (figure 4). The latter group appears to be the one which gives shape to the great de-

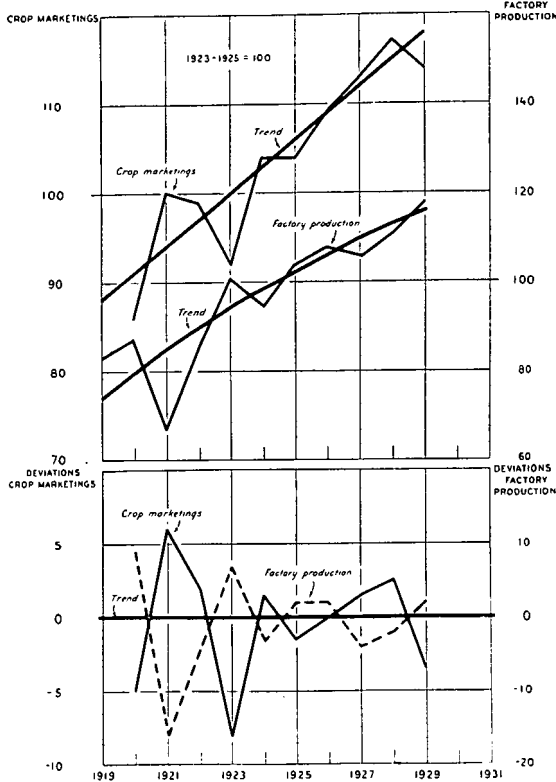


FIGURE 3. INDEXES OF CROP MARKETING AND OF FACTORY PRODUCTION, 1919-1929

*In the post-war period 1920-1929, the volume of crop marketings has been above normal (trend) in years when factory production was below normal and vice versa. Particularly in 1921 and 1922 agriculture contributed large physical volume to industrial activity although its purchasing power was greatly reduced.*

pression of 1921, the sharp depression of 1924 and 1929 and the moderate depression of 1927. The group of industries using organic materials was the first to experience the depression of 1920, but also the first to recover. In fact, in the years 1919 to 1924 the fluctuation in this group tended to precede the fluctuations in the latter, but not since then. In 1927 the agricultural or organic group

of industries were relatively more active, but in the first half of 1930 less active.

Among the organic or agricultural industries the cotton textile industry is unique. It stands between agricultural and other industries being affected at times mostly by one or the other. Usually cotton mill activity reflects general business activity and the industrial demand for cotton. Sometimes, however, it is domi-

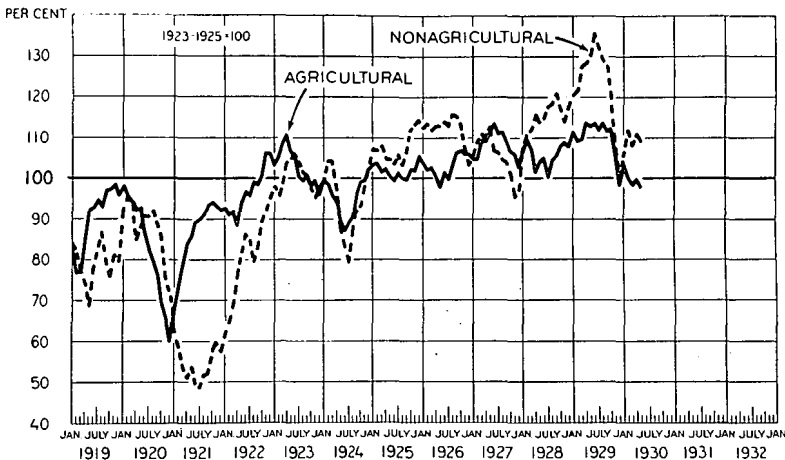


FIGURE 4. INDEXES OF PRODUCTION IN FACTORIES USING AGRICULTURAL AND NON-AGRICULTURAL MATERIALS

Since 1920 the fluctuations in production of factories using industrial raw materials have been greater than that of factories using agricultural raw materials. The latter tended to precede the changes in the industrial group between 1919 and 1924. In two periods, 1921 and 1927, factories using agricultural products were sustaining factors in the general level of business while the others were still tending downward.

*Agricultural materials*—Federal Reserve Board groups of foods, textiles, tobacco, and leather products to which has been added an index of creamery butter production.

*Non-agricultural materials*—all other groups of the Federal Reserve Board index of manufacturers (iron and steel; automobiles; cement, brick and glass; non-ferrous metals; petroleum; rubber tires; paper and printing.)

nated by the supply or price of cotton. In the eleven years 1919-29 there have been two years of very low cotton prices, 1920 and 1926. Both of these situations created rather wide profit margins for the manufacturers and thus reflected themselves in a great expansion in cotton mill activity (right half, figure 5). The net influence of the low prices paid for the 1920 crop was to stimulate an increase in cotton mill consumption of about 25 per cent in the calendar year 1921, this in the face of generally declining

business activity. In 1926, the cotton growers, partly by intention, partly by the aid of nature produced the largest crop on record. Lacking a proper organization for the handling of the crop, farmers marketed as usual, unloading a very large portion of this large crop onto the spot markets during the winter months of 1926 with disastrous effects on prices. When prices had declined and mills had stocked up on cheap cotton, it gave such an impetus to the textile industry that it reached record levels in the summer of

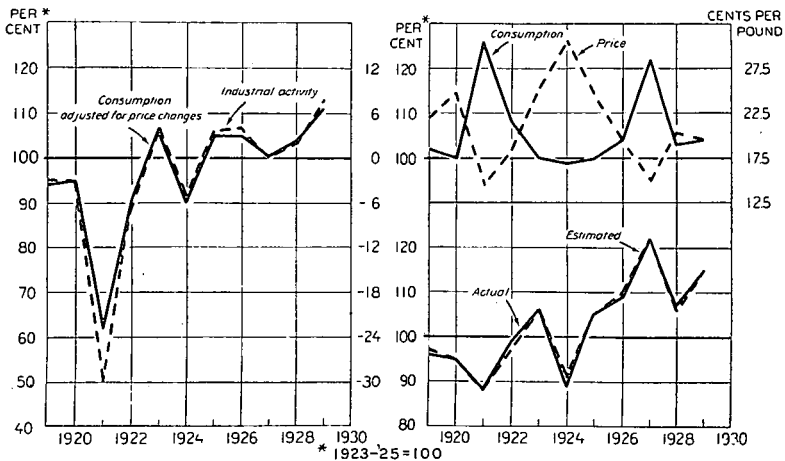


FIGURE 5. UNITED STATES MILL CONSUMPTION OF COTTON RELATED TO COTTON PRICES AND INDUSTRIAL ACTIVITY, 1919-1929

*Cotton consumption, adjusted for changes in the price of raw cotton, reflects a very close dependence on industrial activity (adjusted for trend). The low prices of the 1920 and the 1926 crops resulted in considerable expansion in cotton consumption in the calendar years 1921 and 1927. The effect of business conditions and of the preceding crop-year price of cotton together account for most of the calendar year changes in cotton consumption (compare indexes of estimated and actual consumption 1923-25 equals 100.)*

1927. This too took place in the face of declining business activity. The net influence of the low price of cotton in 1926 was an increase in consumption of about 20 per cent in 1927. In both of these situations of 1921 and 1926 it may be argued that the plight of the cotton farmer temporarily helped the textile and other associated industries. On the other hand the very low returns to the growers naturally reduced the amount of business done by the fertilizer industry and by others catering to the farm market in the South.

In this chain of enterprises, concerned chiefly with the handling,

transporting, financing, processing, and distributing of farm products to consumers, there is another type of enterprise that may be said to have benefited at times from both large and small farm output. This is the group of enterprises centering around the speculative commodity exchanges. They embrace not only those actually engaged in futures trading, but also the many allied activities that derive support from the volume of trading in the exchanges, as for example, brokerage concerns and banks. It is, of course, well known that speculative activity thrives on instability and that they whose profits are derived from speculation are usually in opposition to and often vociferous critics of any attempts to guide economic progress, whether agricultural or non-agricultural, more nearly along a normal course. In the grain exchanges during the post-war period the greatest activity occurred in the years of high prices. The very high prices in the 1924-25 season produced by the small corn crop and again the high prices in 1927 and 1928, were accompanied by trading in corn futures of around 600 million bushels per month. During the periods of lower corn prices of 1922, 1923 and 1926 the volume of trading fell to half that level. Similarly in the wheat market, the high prices of 1924-25 were accompanied by futures trading in wheat in excess of 1,200 million bushels per month or more than twice the size of the commercial wheat crop of that year. The lower prices in all other seasons except 1929 were accompanied by considerably lower volumes of trading. The volume of futures trading in cotton also has risen and fallen with the major trends in the price of cotton. As cotton prices rose from the low levels of 1921 to the very high levels of 1923 and 1924, and down again to recent levels, the volume of cotton futures trading rose and fell. These comments on cotton, wheat, and corn, refer, of course, only to the major trends in prices and in futures trading and not to the short time monthly or daily fluctuations where the movements may be in the same or in the opposite direction. The chief point is that speculative activity thrives on price fluctuations.

#### EFFECT OF BUSINESS CONDITIONS ON FARM PROSPERITY

The ways in which business conditions exert their influence on farm prosperity are perhaps more complicated than the relations that have been discussed so far. If, under the general heading of "business conditions" we include monetary conditions, and the

credit policies of banks, which are factors intimately related to business activity, to speculation in commodities and securities, to the buying power of money in relation to goods, and to foreign trade in American products, the interrelations between business and agriculture are hopelessly inextricable except for the purposes of theoretical discussion. Statistically and quantitatively the play of these general domestic and international economic forces on agriculture is not readily measurable, as was well illustrated in the discussion that followed the papers by Messrs. Enfield, Lloyd and Warren, last week. We shall not attempt to add to their statements on the effects of national and international monetary conditions on agricultural prices and incomes. However, it may be helpful to examine certain facts in which the influences of business on agriculture may reasonably be expected to show up.

Examining first the movements of agricultural prices in general since 1919 and noting the similarity in the behavior of agricultural and other prices in the period of inflation in 1919 and in the two periods of deflation of 1920-21 and 1929-30, it is clear that agricultural prices have shared in the effects of international and domestic credit policies and business conditions. In fact, they appear to have borne somewhat more than their share, both in these periods of rapidly falling prices and in the intervening periods of rising prices. So far, it has not been feasible to determine the extent to which the greater variability in agricultural prices has been due to variations in production and to variations in business and financial conditions. In contrast to the behavior of other prices since 1921, there are two outstanding features: The trend of agricultural prices has been upward between 1922 and 1929, while the trend in other prices has been downward during this period; and the short time cycles in agricultural prices have been on the whole more pronounced than the non-agricultural, particularly during the course of the two business cycles from 1924 to 1927 and from 1927 to 1930. In the period 1921 to 1924, both agricultural and non-agricultural prices reflected the changes in business conditions, but the non-agricultural price cycle was much more pronounced, largely because of a relative scarcity of industrial products compared with surpluses of agricultural products. Since then the more rapid increase in industrial production relative to the volume of agricultural production appears to be one of the chief reasons for the declining trend in non-agricultural prices.

Food prices particularly have reflected in a large measure the recent fluctuations in business activity and the buying power of consumers. The combination of greatly reduced earnings and increased farm marketings resulted in very low food prices (meat and dairy products) in the early months of 1922 (figure 6). The subsequent expansion in consumer buying power and its decline in 1924, another expansion in 1925 and decline in 1927, and also the expansion in 1928 and the decline in 1930 are all reflected in

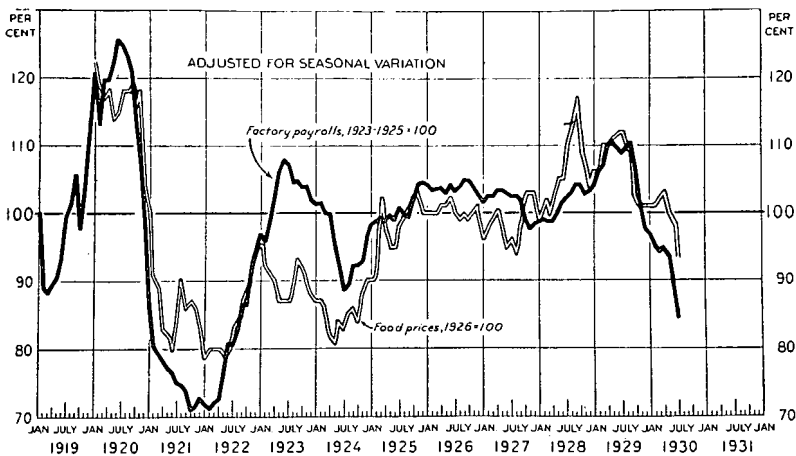


FIGURE 6. INDEXES OF WHOLESALE PRICES OF MEATS AND DAIRY PRODUCTS, AND PAYROLLS

Since 1920 the major changes in wholesale prices of meats and dairy products have reflected the money buying power of consumers, as well as domestic supply and foreign demand conditions. In 1922-23 food prices did not rise as fast as factory payrolls because of very heavy surpluses of food products. The peak prices of 1928 were due to a shortage of cattle.

the aggregate changes in food prices, though the correspondence is far from exact. The submerged food price cycle of 1921-24 as already indicated, was the result of very large supplies. A more rapid rise in 1928 was due to the great cattle shortage, and the greater decline in 1927 appears to have reflected a reduced foreign demand and a reduced demand in the Southern States, following the unprofitable cotton crop in 1926.

Another indication of the effect of changes in the buying power of consumers, lies in a comparison between changes in annual factory pay rolls and farmer's cash income from the sale of live-stock, 95 per cent of which is usually consumed in the domestic

markets (figure 7). Since 1923 there has been a fair correspondence between factory payroll variations and farm income from livestock sales, and since the aggregate quantities of livestock marketed annually have been practically constant since 1924, the variations in farm cash income may be taken to reflect the changes in the buying power of consumers, and the changes in the amounts that packers and dealers have been able to pay farmers. In these seven years, the annual cash returns to livestock producers have varied somewhat more than factory payrolls.

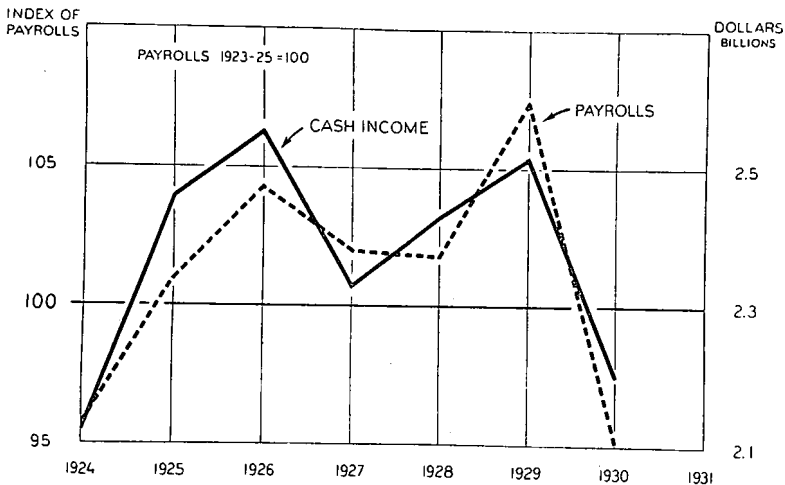


FIGURE 7. FACTORY PAYROLLS AND CASH FARM INCOME FROM LIVESTOCK, 1924-1930

*The variations in the buying power of consumers has been an important factor in the farmer's income from the sale of cattle, hogs and sheep. Livestock sales were greater in 1926 and in 1929 when factory payrolls were high, than in 1924 and 1930 when they were considerably lower.*

Other studies in the response of prices of individual commodities, such as cattle, hogs, sheep, potatoes, truck crops, cotton, butter and eggs, to changes in business conditions also reveal the effects of changes in consumer buying power. There are, of course, differences in the degree of response. The price of hogs for example, appears to have been more sensitive to business conditions than the price of cattle. But together they warrant the generalization that consumers pay more or less for food products depending on the state of their earnings.

The ups and downs in business activity have also created varia-

tions in the industrial consumption of farm products as raw materials, and therefore, in the industrial demand for them.

Cotton, the outstanding farm product used as a raw material in many industries, notably in the automobile industry, serves as an admirable illustration of this type of influence of business on agriculture. We have already referred to the stimulating effect of low cotton prices on the mill consumption of cotton in the United States. If the influence of price is removed from the annual variations in cotton consumption, the result is found to bear a most striking resemblance to the variations in business activity after adjustments have been made for trend (left half, figure 5). In 1921 the consumption of cotton would have been most drastically cut had the low prices of the preceding year not served as an offsetting factor. Similarly in 1927 the consumption of cotton would have shown a falling off of about 5 per cent, but for the stimulating effect of the low cotton prices of 1926. On the average, a change of 10 per cent in manufacturing production has caused a 15 per cent variation in the mill consumption of cotton.

The effect of this dependence of the farmer's markets for cotton on the industrial situation, may reflect itself in several ways. A falling off in business activity while the crop is being marketed tends to lower the mill demand for cotton. And a continuation of a business depression such as we have had for the past 10 months, accompanied by a low level of cotton consumption, increases the carryover which in turn becomes a factor in the prices received for the succeeding season's crop. Such adverse influences are facing the cotton grower at the present moment.

In addition to the effects of the business cycle on agriculture arising through variations in industrial demand and in the buying power of consumers, there are also effects on the costs of farm production and the costs of living on the farm. These arise from changes in such items as commodity prices, city wage levels, and interest rates, which fluctuate with the business cycle. Insofar as these items of costs are passed on to farmers they tend to reduce the farmer's net income in times of business prosperity, and to increase it in times of depression. The behavior of country prices of goods and services in the post-war period indicates that changes in the city wholesale markets are only partly and tardily reflected in the country but our factual information on these items is at present meager.



However, one influence of business on farm costs which we can measure, is the influence of city employment on farm labor and farm wages. The supply of farm labor in the past decade, as in former ones, has fluctuated inversely with industrial employment, and at the present time, the low volume of city employment has so enlarged the supply of labor that the level of farm wages declined sharply from that of 1929 (figure 8). Although in one sense this tends toward reducing the costs of farm production, it by no means offsets the great damage done to the farmer's cash income

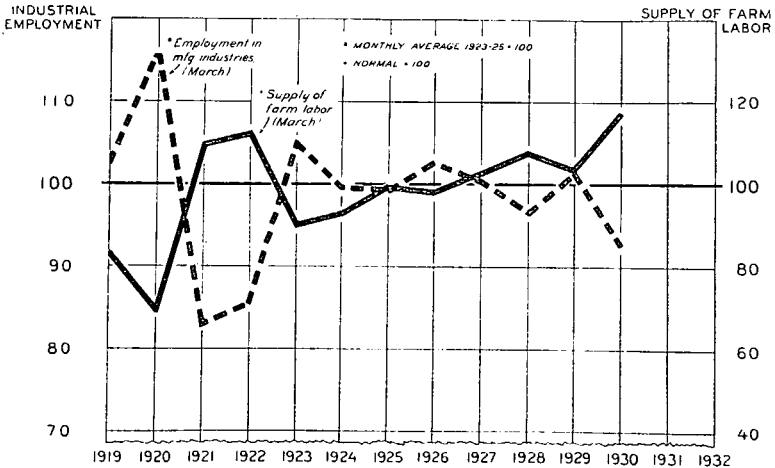


FIGURE 8. SUPPLY OF FARM LABOR AND INDUSTRIAL EMPLOYMENT, 1919-1930

*The relative supply of farm labor (and also the level of farm wages) depends to a large extent on the industrial employment situation. The industrial depressions of 1921, 1922, and 1930 increased the number seeking jobs on farms, while the industrial booms of 1920 and 1923 created relative scarcity of farm labor.*

by the reduced buying power of city consumers, resulting from widespread unemployment.

This movement of population between city and farm has another aspect in relation to agriculture in that it serves to complicate the problem of adjusting farm production. In the past few years as many as one million five hundred thousand people have moved to the farm in one year of business depression, compared with only one million in a year of prosperity. This year there are probably many more than a million and a half people driven to look for farming opportunities (figure 9).

Conversely, the movement of the farm population to the cities

is also accelerated in years of reduced farm incomes and retarded in years of increased incomes. In recent years the movement of farm population to the cities has been as high as 2,155,000 in a year of

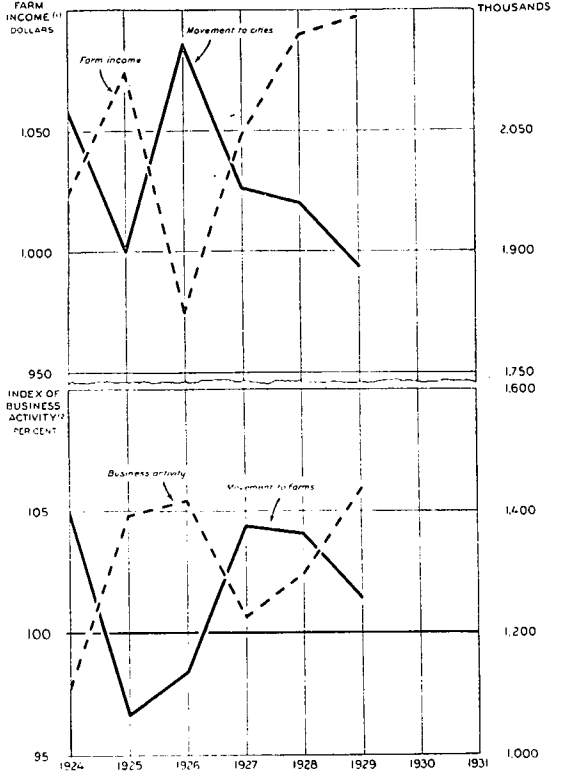


FIGURE 9. FARM INCOME, BUSINESS ACTIVITY, AND POPULATION MOVEMENT, 1924-1929

*In the recent population shifts, changes in farm income are largely responsible for the changes in the rate of movement from farms to cities, and changes in industrial activity are responsible to a large extent for the variations in the movement from cities to farms.*

- (1) Farm returns, receipts less cash outlay.
- (2) Federal Reserve Board index of productive activity (100=normal).

reduced income, and as low as 1,875,000 in a year of improved income. Thus in recent years there has been a constant flow of population to and from the farms and cities, the rate of flow from each source accelerated or retarded by yearly variations in farm and industrial conditions.

### RELATION OF AGRICULTURAL PRICE CYCLES AND BUSINESS CYCLES

What we have said so far concerning the ways in which variations in agricultural income, production, and prices affect different segments of business may help us to understand the apparent relationships that appear to have existed between agricultural price cycles and business cycles during the past 55 years. We refer to the fact that, contrary to common observation, periods of relatively high agricultural prices have been followed by periods of industrial

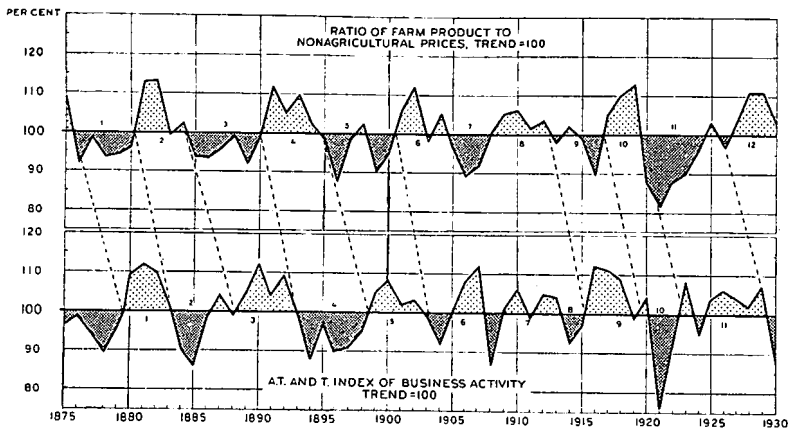


FIGURE 10. AGRICULTURAL PRICE CYCLES AND BUSINESS CYCLES

Since 1875 there have been six periods of relatively low agricultural prices. These have generally been accompanied by rising industrial activity or followed by industrial prosperity. There have also been five periods of relatively high agricultural prices, each of which has been followed by declining or depressed industrial activity. The relatively high prices of 1928 and 1929 suggest that subnormal industrial conditions may prevail in 1931 as well as in 1930.

depression, and that periods of relatively low agricultural prices have been followed by industrial prosperity (figure 10).

By agricultural price cycles we mean here, prices of major farm products in wholesale markets, compared with prices of non-agricultural products; in other words, the relative purchasing power of agricultural prices in exchange for industrial products. During the past 55 years there have been alternating periods of relatively high and low agricultural prices. These almost periodic fluctuations have taken place around an upward trend for most of the fifty-five year period. In the sense used here, relatively high agricultural prices may be the result of high agricultural prices, low

non-agricultural prices, or a combination of both such as occurred in the period 1926-29.

Business activity during this same 55 year period has also fluctuated around an upward trend of growth. When the cyclical fluctuations on the purchasing power of agricultural products are compared with the cycles of business activity, the first impression is that prosperous or depressed general business conditions create relatively high or low agricultural prices respectively, for we find that in a general way, low agricultural prices have been associated with low business activity, and high agricultural prices with high business activity, the latter preceding somewhat, the comparable periods of agricultural prices. But a closer examination shows that each period of relatively high agricultural prices was followed by a period of depressed business activity, and periods of low agricultural prices were followed by industrial prosperity. When analyzed in more detail, the following observations may be made:

1. Since 1875 there have been six periods of relatively low agricultural prices. Each of these except one has been followed by a period of industrial recovery and prosperity.

2. During the same fifty-five years there have been five periods of relatively high agricultural prices, four of which have been followed by periods of business depression; a sixth period, that of 1926-29, has also been followed by the present business depression.

This illustration is not intended as an explanation of variations in business activity. Business cycles appear to be related to many complicated forces, and the importance of these forces is subject to a wide range of disagreement among students of business economics. Furthermore, the fact that some positive relation also exists between agricultural price cycles and business cycles does not justify stressing the negative relation beyond reason. We are, however, inclined to the belief that the paradoxical negative relation between agricultural price cycles and business cycles is greater than the positive influence of business cycles on agricultural price cycles.

How may we explain these paradoxical sequences? It will be obvious from what has already been said that cyclical fluctuations in agricultural prices are largely the result of changes in production. Consequently, periods of low prices (or large farm output) stimulate those activities which are engaged in financing, transporting, warehousing, manufacturing, distributing and exporting farm prod-

ucts. Industrial employment and the purchasing power of urban consumers consequently tend to increase, and while food prices remain relatively low, the urban market for non-agricultural products is increased. As industrial recovery continues, it tends to strengthen agricultural prices and to improve the buying power of the farming population.

In periods of relatively high agricultural prices these factors tend to work in the opposite direction. Reduced farm production as reflected in high prices, tends to reduce the physical volume of business done by all the enterprises which handle, process, and distribute farm products. That in itself tends to affect adversely the purchasing power of consumers through reduced employment. Furthermore, the higher prices of food products diminish the ability of city consumers to buy non-agricultural goods, and the higher prices of non-agricultural raw materials adversely affect the profit margins of certain manufacturing industries. At the same time the industries depending on the farm market as an outlet for their goods are affected favorably or unfavorably, depending on whether the smaller farm output has resulted in larger or reduced farm income.

The relations between business and agriculture are not so readily summarized in a few sentences as are the relations between agriculture and business. Such a discussion would lead us into the complicated effects of international financial and business conditions on domestic agricultural prices, production, and income, a field which we have purposely avoided in this discussion. It would also lead us into the influences of international factors in our business cycles, another subject about which we know all too little. Consequently, the only generalization that we are justified in making concerning the business influences on agriculture is that those influences exist; that they at times assume a very real and predominant importance in agricultural welfare; and that they are of sufficient magnitude at frequent intervals to be considered in any agricultural program for the United States. Agricultural stability, it seems to us, can not be accomplished without reference to business stability in the United States and to financial stability in other countries.

For the purpose of concluding this paper, the question may be raised whether in view of the continued decline in the agricultural population in the United States, agriculture will in the future

continue to play the rôle it appears to have played in the past. Since 1900 the number of persons gainfully occupied in pursuits largely agricultural, declined from 38 per cent of the total population to 27 per cent in 1920 and to nearly 20 per cent at the present time. Farm production of foods, textiles and tobacco alone, which in 1899 supplied the raw materials for 32 per cent of the total number of factory wage earners, still supply raw material for about 30 per cent of all factory wage earners. If in this comparison we include the lumber and leather industries, it may be said that agriculture still supplies the raw materials for industries that employ 40 per cent or more of the total number of factory wage earners. Another fact indicative of the magnitude of agriculture in our industrial life is that about 50 per cent of the money value of all retail trade in our large centers of population is agricultural, that is, food and clothing, and a rise of 10 per cent in the price of food and clothing may mean as much in curtailed purchasing power for non-agricultural goods as a decline in factory employment and pay rolls in an ordinary business depression. Furthermore, it should be recognized that agriculture as a market for non-agricultural goods now receives only about 10 per cent of the national income. These facts indicate that the importance of agricultural output to industry is still very large although the importance of the rural market has declined; that agriculture promises to continue as a major source of the nation's food supply; and inasmuch as agricultural production will continue to fluctuate primarily in response to climatic conditions and in part to high and low prices, general business activity will undoubtedly continue to show corresponding changes even though all other disturbing influences in our national business activity were stabilized; and finally, until a greater degree of business stability is accomplished, we may expect that farmers' incomes will continue to be drastically influenced by domestic and foreign business conditions as well as by domestic and foreign agricultural production.