Short-Time Changes in Agricultural Prices

Over a long period of time, as Figures 1 and 2 show, agricultural prices have gradually risen and then fallen relative to nonagricultural prices. In addition to this long-time, gradual dissimilarity of price movements, there is a more marked dissimilarity within short periods of a decade or so in length. Over these shorter periods of time, agricultural and nonagricultural prices may move in opposite directions, or at least move different amounts in the same direction, more markedly than they do over long periods of time.

This dissimilarity of short-time movements is clearly revealed if attention is focused on the movements of agricultural and non-
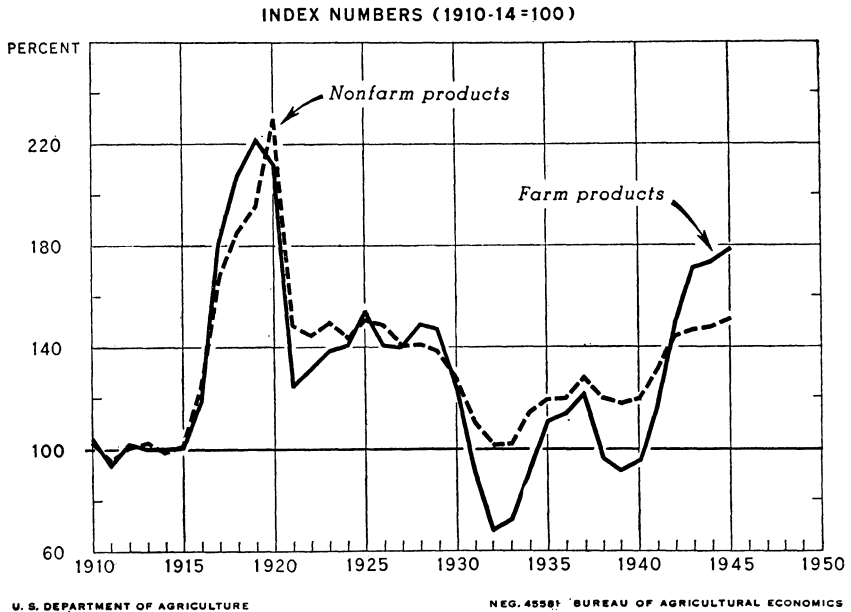
INDEX NUMBERS (1910-14=100)

FIG. 6.—Wholesale prices of farm products, and of all commodities other than farm, United States, 1910–45. Index numbers (1910–14 = 100).

[20]

agricultural prices during the past twenty years. These movements are shown in Figure 6, on a larger scale than was possible in Figure 1. The basic data are the same as those shown in Figure 1.

The chief difference between the movements of agricultural and nonagricultural prices over the past thirty years is shown in Figure 6 to be the difference in the amplitude (size) of their movements. During World War I the two price series rose to about the same extent, but since that time agricultural prices have fluctuated about twice as much (that is, over about twice as great a range) as non-agricultural prices. This was true during World War II as well as during peacetime (nonagricultural prices were held down more by price controls during the war than agricultural prices were).

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WHY ARE INDUSTRIAL PRICES MORE STABLE THAN
AGRICULTURAL PRICES?

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Why are nonagricultural prices (or to use a less clumsy term, industrial prices) so much more stable than agricultural prices?

It is not because the demand for industrial products is more stable than the demand for agricultural products. The demand for industrial products fluctuates as much as the demand for agricultural
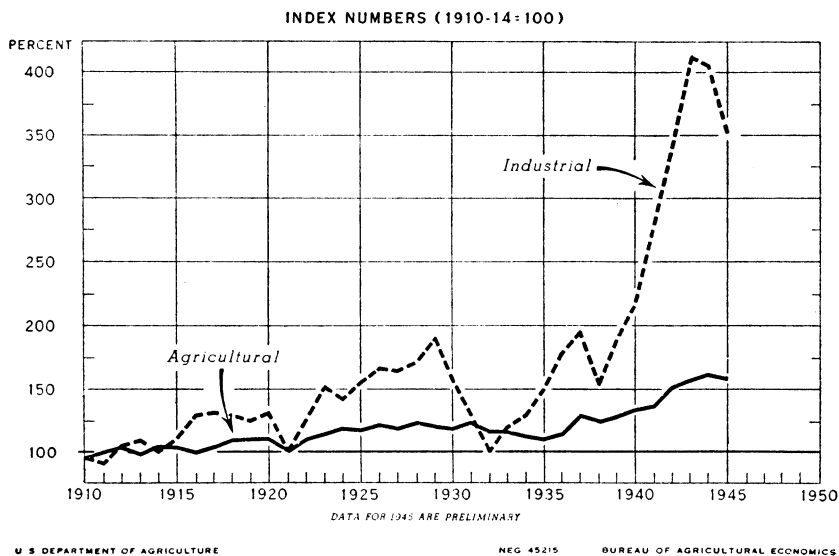

Fig. 7.—Volume of production: Agricultural and industrial, United States, 1910–45. Index numbers (1910–14 = 100).

products—perhaps more. The reasons for the comparative stability of industrial prices must lie in the conditions of supply.

Figure 7 shows that this is true. The production of industrial products has fluctuated widely, while the total production of farm products, in spite of the effects of the record-breaking drouths of 1934 and 1936, has remained comparatively stable.

This chart shows that industrial prices are comparatively stable, in spite of the great fluctuations in demand that go with prosperity and depression, because industrial production fluctuates greatly and concurrently with those fluctuations in demand. The changes in demand are largely offset, in their effects on price, by corresponding changes in supply. The chart also shows that agricultural prices are unstable because agricultural production remains comparatively constant in the face of great fluctuations in demand. The small changes in agricultural production that do take place result chiefly from changes in such physical things as weather, and show practically no correlation with fluctuations in demand. Since agricultural supply is relatively constant, great fluctuations in demand cause great fluctuations in agricultural prices.

The question, therefore, boils down to this. Why is agricultural production stable, in spite of great cyclic changes in demand, and why is industrial production unstable, fluctuating with cyclic changes in demand?

WHY DOES AGRICULTURAL PRODUCTION REMAIN STABLE WHEN DEMAND FLUCTUATES?

It may seem strange that agricultural production remains stable when demand fluctuates greatly. Elementary economic theory teaches that under a freely competitive system, with positive sloping supply curves, a decrease in demand reduces prices; and this reduces production to the point where equilibrium between costs and prices is restored, at lower levels than before. An increase in demand brings about similar but opposite adjustments.

But this is true only of long-time changes and adjustments. Things work out differently when the changes in demand are severe and sudden. So high a proportion of the costs in agriculture are fixed that once the investment is made, when prices decline suddenly the farmer cannot reduce his costs much by reducing his production. In fact, in the face of falling prices he may attempt to meet his fixed costs by producing more, not less.

The situation is complicated by the further fact that in the short run a farmer has even less control over the prices at which he sells his products than he has over his costs of production. If he does reduce production, as an individual act, that will have no appreciable bolstering effect on the prices of his products. If all farmers reduced production, that would at least reduce the fall in agricultural prices. But since no one farmer has any assurance that the bulk of his competitors (other farmers) will reduce their production, he dares not reduce his; so nobody reduces production.

Even nation-wide programs for reducing agricultural production, organized by the federal government, have not been very successful. The AAA programs of the 1930's reduced the acreage of cotton, wheat, corn, etc., by percentages ranging from 10 to 40, but yields per acre increased (partly as a result of the reductions in acreage). Except for cotton, production was not reduced appreciably below previous levels.

Conversely, when agricultural prices rise, agricultural production as a whole cannot expand very much. The expansion during World War I was slight—only about 5 per cent. During World War II, the expansion was considerably greater—about 33 per cent—but a large share of this expansion was the result of good weather, a large carryover of feed grains, etc., as shown in the preceding chapter. The plain fact is that agricultural production runs close to capacity all the time, and cannot be expanded much under any circumstances. Livestock production, for example, is limited by livestock feed production, and that cannot be expanded much. Additional fertilizer can be applied if prices are high, and land farmed somewhat more intensively, but the agricultural "plant" cannot run more than twenty-four hours a day, and only very small additions to the plant can be made. To put it in a sentence: The short-time elasticity of agricultural supply is low—even lower than the long-time elasticity, which we saw was probably less than 0.5.

Agriculture, then, faces an inelastic short-time demand for its products with an inelastic short-time supply. Under those conditions, a small change in either demand or supply causes a large change in price. Until some means is found for keeping the demand for farm products more stable than it has been in the past, the short-time changes in agricultural prices are likely to continue to be violent.

REASONS WHY INDUSTRIAL PRODUCTION FLUCTUATES WITH FLUCTUATIONS IN DEMAND

Industrial production is not stable like agricultural production. It fluctuates concurrently with fluctuations in demand. This offsets or at least reduces the effect of fluctuations in demand upon industrial prices.

Why does industrial production fluctuate with fluctuations in demand, while agricultural production remains stable?

The answer to this question has been phrased by some economists in terms of the amount of administrative control existing over production and prices in the different industries. As goods move from the raw-materials stage through successive stages of fabrication and distribution to the consumer, the market for each product narrows down. This narrowing down may be geographical, or it may be functional (i. e., the uses of the product may become more restricted) or both. Thus wheat can be produced for a world market, but fresh-baked bread in one city cannot well be supplied to another more than one hundred or two hundred miles away. That is a geographical limitation. In addition, wheat as grain can be used for stock feed, chicken feed, seed, or flour. But once it has been made into flour it cannot be used for any other purposes; and once the flour has been baked into bread it cannot be used to make crackers or macaroni. That is a functional limitation.

This geographical and functional narrowing down of the market reduces the number of processors in each successive market stage. This tendency is reinforced by the economies of large-scale manufacturing or processing plants as contrasted with the economies of small-scale farms where the product was originally grown. The most efficient farm unit is small; the family-sized farm is still dominant. But the most efficient flour mill or steel mill or aluminum plant is very large (before World War II, four plants supplied all the new pig aluminum produced in the United States). It takes a million wheat farmers to supply the wheat market. But a few hundred or thousand flour mills supply the flour market, and a few bakers supply a small town or city market with bread.

"This same tendency appears in industry after industry: as cotton moves into yarn, into cloth, into clothing, onto the shelves or racks of the local store; as iron ore moves into pig iron, into steel, into particular standard shapes, and finally into a place in a particular building; and as timber moves into wood pulp, into paper, into a

printed book, and onto the counter of a local drug store. Sometimes there is a return flow as the worn-out auto reappears as scrap iron or as the book is collected as waste paper, but on the whole the market for goods at each successive stage tends to be narrower, sometimes geographically, sometimes functionally, and sometimes both."[1]

The narrowing down of the market and the increasing size of the business unit both operate to reduce the number of processors in successive market stages. This reduction in number of business units makes it easier for them to exert some administrative control over prices. Each one of the million wheat, or cotton, or corn, or hog farmers has to take the market price for his product; but farther along the line, the number of processors gets small, and they are in a position to exercise some control over their prices.

This may or may not involve outright collusion, or complete concentration into one unit such as exists in the case of nickel and virgin aluminum. The arrangement may be very loose and informal, perhaps reinforced by patents or through control of natural resources or through strategic location. However the arrangement is maintained, it results in more or less complete administrative control over prices. It is "abundantly clear that a considerable degree of administrative control is inherent in the narrowing of markets and the willingness of buyers to accept the one-price system of American merchandising. Further administrative control is implicit if the efficiencies of modern technology are to be realized. Only to the extent that administrative controls arise from collusion between enterprises or through the bringing of production under common control beyond the extent necessary for efficient operation is there an opportunity to reduce the existing degree of administrative control without incurring a cost of decreased efficiency in the use of resources. Thus a considerable degree of administrative control over prices appears to be inherent in the modern economy. Administered prices and their depression insensitivity seem to be an integral part of the structure of economic activity. With the century-long transition of this country from a predominantly agricultural to a predominantly industrial country, the administration-dominated prices of industry have gradually displaced the market-dominated prices of agriculture as the more characteristic form of price. As recently as 1870, over half of the gainfully employed workers in the

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[1] *The Structure of the American Economy, Part 1. Basic Characteristics*, U. S. National Resources Committee, 1939, p. 144.

United States were engaged in agriculture, whereas in 1930 little over a fifth were so engaged. However much of a role price administration may have played in the earlier years of this century, there can be little question that it plays a dominant role today."[2]

Further investigation of the behavior of industrial prices requires the application of analytical concepts in the theory of imperfect or monopolistic competition. This application is made in later chapters.

PROSPECTS FOR THE NEAR FUTURE

The conclusion was reached at the end of the preceding chapter that agricultural prices, were likely to decline relative to other prices over the long run in the future. What are the prospects over the shorter run—over the next five or ten years?

Figure 8 shows that agricultural prices during World War II rose almost as much as they did during World War I; they nearly doubled. After the end of World War II, they rose more than they did after World War I. But the prices of nonfarm products during World War II rose only about 20 per cent, whereas in World War I they rose nearly 100 per cent. Only after the end of World War II did they rise sharply.
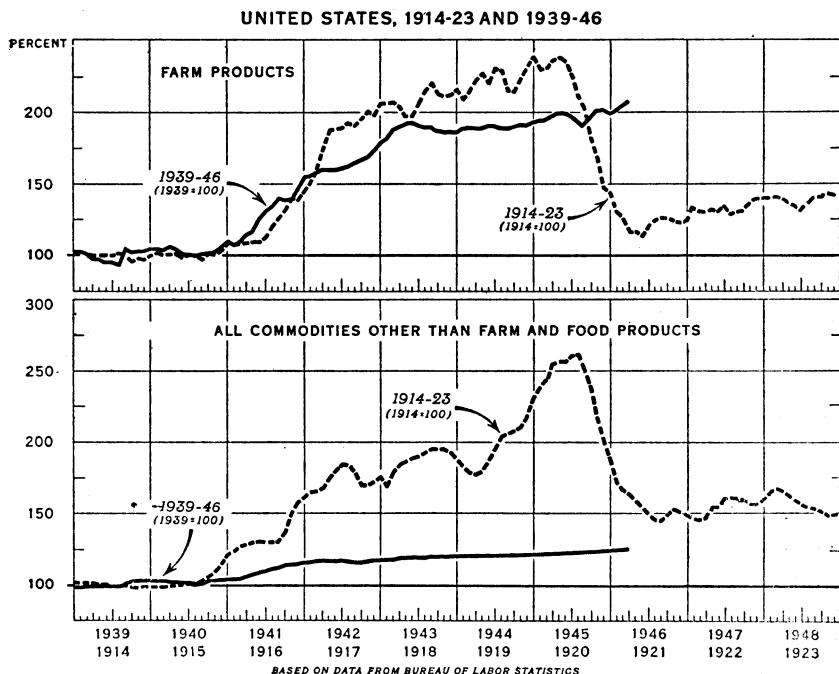
If all prices during and after World War II had risen 100 per cent there would be some grounds for believing that they might all remain high after the war—although not much grounds, for agricultural prices normally rise during war and fall afterwards. But only the prices of farm products rose 100 per cent, and they have a weight of only 17 per cent in the total index of all wholesale prices; that is, only 17 per cent of the weight in the total index has risen 100 per cent. Food products, whose prices are dependent mainly on the prices of farm products, have a weight of 18 per cent. The prices of other commodities, with the remaining weight of 65 per cent, rose only 20 per cent during World War II, and only 30 per cent shortly after the end of the war.

Farmers during the war lived in an atmosphere of high prices for their products, and they were inclined to suppose that all prices were up about like theirs. If that had been true, that would have made it more likely that agricultural prices would remain permanently high after the war. But Figure 8 shows how agricultural prices rose more than other prices. The two price indexes will probably come together again after the war (or cross over, as they did after World War I). And when they come together or cross

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[2] *Ibid.*, p. 145.

over, it seems likely that most of the readjustment will be made by a marked decline in the relatively unimportant agricultural prices

Fig. 8.—Wholesale prices of farm products, and of all commodities other than farm and food products, United States, 1914–23 and 1939–46. (1914 = 100 and 1939 = 100, respectively).

that have a weight of only 17 in the general index, and by only a comparatively small rise in the levels of the nonagricultural prices, with their weight of 65.

Thus if the reconversion to peacetime conditions is made without any postwar depression developing at all; if employment and industrial activity are maintained at about the levels existing just before the war; the probabilities are that even so, agricultural prices will decline toward the levels of nonagricultural prices. During the war these nonagricultural prices rose only about 20 per cent higher than they were before the war, and only about 10 additional points just after the war. If agricultural prices return to similar levels, they will not be much more than half as high as they were during and immediately after the war.

A few price data will make clear what this means in dollars and cents. Most of the time from 1943 to 1946 (before the OPA was finally abandoned) the price of hogs at Chicago ranged between $13 and $15 per one hundred pounds.[3] Prices before the war were less than half as high as this; in 1940 they averaged only $5.71, and in 1939 they averaged only $6.57. Similarly, most of the time from 1943 to 1946, the farm price of wheat ranged between $1.30 and $1.60 per bushel;[4] in 1940 it averaged only 68.2 cents, and in 1939 it averaged only 69.1 cents.

Even if full employment (a condition only rarely attained in the past) is maintained for several years, the BAE has estimated that "allowing . . . for moderate improvements in technology between now and 1950, all the products required to meet foreign and domestic demand at that time under conditions of full employment could be produced on 327 million acres of cropland or about 23 million acres less than was used in 1943. This suggests the possibility that agricultural production generally might outrun demand even under full employment.

"A government program to supplement the diets of low-income people would provide an outlet for the product of additional cropland totaling about 5 million acres.

"Should unemployment reach such a huge total as 17 millions, a level for 1950 comparable to that reached in the early thirties, the national income would be hardly more than one-third of what it would be under full employment, and agriculture would be prostrate again—as it was then.

"Even conditions under which 7 millions of the 60 million workers were out of work would create great difficulties for agriculture. Farm income would fall to two-thirds of what it would be under full employment, the average level of farm prices would be only three-fourths as high, and the parity ratio for average farm prices would stand as less than 90 per cent.

"The net conclusion from all this is that with full employment the postwar adjustments required in agriculture will be manageable but that the difficulties will multiply as the number of unemployed is increased."[5]

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[3] *Livestock, Meats, and Wool Market Statistics and Related Data*, p. 47.

[4] *Agricultural Statistics*, USDA. 1945, p. 9.

[5] *What Peace Can Mean to American Farmers*, USDA Misc. Pub. No. 562, 1945, p. 28.