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Prospects for agricultural recovery V. Is our national farm plant too large?

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Prospects for Agricultural Recovery

V. Is Our National Farm Plant Too Large?

BY THEODORE W. SCHULTZ

AGRICULTURAL EXPERIMENT STATION
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AMES, IOWA
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Prospects for Agricultural Recovery

V. Is Our National Farm Plant Too Large?

By Theodore W. Schultz

The Agricultural Adjustment Act was passed to correct the economic situation that is depressing American agriculture. The aim of the Act is to restore and increase the buying power of our farm people. The Act is looked upon as an integral part of the whole recovery program of the federal government. In general, that part of the recovery program set forth in the farm act, is based very largely on the assumption that our national farm plant is too large—that there is a serious maladjustment between the output of our farms and the effective demand for food and other raw materials produced on farms. Farm people, and students of farm problems, are called upon to evaluate the soundness of the broad economic policies laid down in the Agricultural Adjustment Act. But there can be no correct appraisal of these policies without first thoroughly understanding the economic data and the economic theory which provide the most reasonable explanation of the factors responsible for the emergency, and depression in agriculture.

Some of the more important aspects of the emergency in agriculture, as well as certain recovery proposals, were considered in the 10 circulars prepared by the staff in Economics.
of Iowa State College last year. The aim of this bulletin is to bring together the more important economic facts that bear directly upon the apparent lack of balance between farm supplies and consumer demand. Our task is to determine whether or not our national farm plant is too large, and, if so, will a curtailment of agricultural production bring about a better balance between agriculture and the non-agricultural industries? and, will it change the proportion of the national income which flows to rural and urban people?

In considering the economic forces and factors that are depressing American agriculture, it is necessary not only to understand the emergency, but, it is also essential to go back of 1929 and determine whether farmers, at that time, were operating at an economic disadvantage, compared with other groups of producers in this country. In order to get at both the short and long-time aspects of the farm problem this study is divided into two major phases.

The first of these phases covers the period since 1929. In it will be considered the effect of the general crisis in trade upon agriculture.

The second phase deals with some of the longer-run economic factors affecting American agriculture. Since it is our purpose to follow through some of the consequences of the World War, this period covers the two decades since 1914.

AGRICULTURAL CONSEQUENCES OF THE GENERAL CRISIS IN TRADE SINCE 1929

THE PRODUCTION SIDE

One of the chief characteristics of a trade crisis is declining prices. We shall, therefore, begin by taking up the effect of a rapidly falling price level upon agriculture. Commodity prices started their downward spiral toward the close of 1929.
For nearly 4 years they continued to fall, with minor interruptions, until late last spring when there occurred one of the most spectacular speculative rises in prices, particularly in grains, ever known. Prior to this, commodity prices had been declining not only in the United States but the world over; and, while the price structures of the world were sagging, prices of farm commodities fell faster and farther than those of any other major group.

Our query at this point is, what happens to agricultural production as a direct consequence of rapidly declining farm commodity prices? What are the alternatives and what is the nature of the response, for example, of wheat growers in Canada, Argentina, Australia and in our own wheat regions, Kansas and North Dakota, when such growers face a downward spiral of prices such as has recently occurred?

Experience, here as well as abroad, is that farmers, whether growing wheat or any other crop or livestock, do not reduce their production when prices fall. There is, in fact, much economic pressure upon the individual farmer to increase his output. Even bankruptcy, liquidating as it does individual producers, seldom reduces the size of the farm plant as a whole. If an insurance company takes over a farm, more likely than not, the former owner-operator becomes the tenant. Then, there is the effect of industrial unemployment, a by-product of depression, which forces many city workers back to the farm, thus increasing the farm labor supply.

A brief examination of the more important characteristics of the farm enterprise helps explain why farmers cannot of their own choice reduce production. In the first place, there are over 6 million farmers in the United States. An individual farmer produces only an infinitesimal fraction of the total crop. Take for example a representative Iowa farmer harvesting 2,200 bushels of corn. He produces less than one-millionth of the total crop which averages for the United States, 2,600,000,000 bushels. This, however, is considerably less than one-millionth of the total world output, and corn is only one of several feed crops which are readily substituted one for another.
operations. His action, by itself, has no measurable effect upon the total supply and hence upon the price of corn. No one believes that a single farm enterprise is large enough to be of any consequence in influencing the price of its products through the supply side of the market. Note, however, that this is in striking contrast to much of industrial production wherein the amount produced is governed with the intent, during a depression for example, of maintaining the selling price of the commodity. It is characteristic for agriculture to be faced with maintained production and low prices during a depression. In contrast, industry complains of factories not in operation, excess plant capacity and unemployment. In agriculture, production is maintained; in industry, the price of the commodity sold is largely maintained.

Capital Invested in the Farm Enterprise

Land, once in cultivation, is abandoned very slowly and capital improvements added to farm land assumes a relatively fixed form. Investment in drainage or irrigation, clearance of stumps and stones, roads, and to a lesser degree, fences and buildings, are all practically immovable. These are capital investments. They cannot be shifted. Consequently, contraction in agriculture, to the extent that it involves a shifting of capital investments, is slow and fraught with difficulty. Even though alternative opportunities are available, which certainly is not the case during a general depression, farmers are not in a position to abandon capital investment without assuming a greater loss than if they continued to farm. The length of time that it takes to liquidate a portion of the farm plant through a process of low prices is not a matter of years but of decades.

Farm Labor Supply

In the case of labor the farmer again finds himself unable to make any savings in cost by curtailing production. Since farm work is done chiefly by the operator and his family the supply of labor cannot be reduced significantly. Obviously, one cannot discharge his family—much less himself. The family, moreover, is the fundamental economic unit in farm-
ing in which the wife is virtually essential to success. In con­
trast, it is one of the weaknesses of our economic system, that
manufacturers are able to transfer much of the burden of de­
clining prices and restricted demand to workers by reducing
payrolls and by discharging laborers. Here the individual work­
er, not his family, is the basic economic unit where the human
factor is concerned.

A glance at the 1930 Census further suggests why the
amount of labor available for farming is so inflexible. The Cen­
sus shows that less than half of the farm operators in the Unit­
ed States employ any labor whatsoever. Much of the labor
that is hired on farms is part-time employment. Frequently,
it is one neighbor helping another over peak loads, filling silos,
threshing and putting up hay.6

Furthermore, the “back to the farm” drift of the last few
years of large numbers of city unemployed cannot be disre­
garded. Unemployed people have returned to the farm where
at least food and shelter are forthcoming. As a consequence,
the farm population, which had been shrinking for many years,
increased by 2 million persons from 1929-33. This increase
in farm labor has and will, for some years, tend to maintain
or even increase farm production.

The Curse of High Fixed Charges

There is little doubt that in the short run, rapidly falling
prices place much pressure upon farmers not only to maintain
but actually to increase their production of crops and livestock.
When the price of corn falls, the grower has only one way by
which he can maintain his income, and that is, by increasing
the amount that he has to sell. The reason why he must main­
tain his income arises chiefly from the fact that farming is sub­
ject to relatively high fixed charges relative to the total cost
of operations. In an earlier study, it was pointed out why
high fixed charges tend to bring about more intensive cultiva­

6 The 1930 Census reports 6,289,000 farm operators of which 2,632,000 in­
dicated that they hired some farm labor during 1929. Of those reporting
labor, the employment for 1929 averaged 156 days.

7 Black, A. G. The Agricultural Emergency in Iowa. I. The Situation
Fig. 1. The decline in Iowa farm prices and the response that farmers of Iowa have shown in their production of selected farm commodities during the depression.

Suffice it to say that regardless of whether a farm is operated at full or part of its productive capacity the cost of running it remains about the same. Payment of interest, principal on mortgages, taxes and other debts, bulk large. While the returns per acre for 1932-33 were about 60 percent less than in the pre-war years, the average mortgage debt per acre was

**TABLE 1. PRICES PAID TO PRODUCERS AND PRODUCTION OF SELECTED FARM PRODUCE IN IOWA, 1925 TO 1933.**

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Oats</th>
<th>Hogs</th>
<th>Total Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price per bu.</td>
<td>Price per bu.</td>
<td>Price per cwt.</td>
<td>No. of head</td>
</tr>
<tr>
<td>1925</td>
<td>.86</td>
<td>.39</td>
<td>11.08</td>
<td>10,882,512</td>
</tr>
<tr>
<td>1926</td>
<td>.60</td>
<td>.34</td>
<td>11.62</td>
<td>10,675,479</td>
</tr>
<tr>
<td>1927</td>
<td>.74</td>
<td>.41</td>
<td>9.49</td>
<td>11,551,093</td>
</tr>
<tr>
<td>1928</td>
<td>.81</td>
<td>.43</td>
<td>8.61</td>
<td>13,125,056</td>
</tr>
<tr>
<td>1929</td>
<td>.77</td>
<td>.39</td>
<td>9.48</td>
<td>12,326,623</td>
</tr>
<tr>
<td>1930</td>
<td>.69</td>
<td>.33</td>
<td>8.80</td>
<td>12,170,060</td>
</tr>
<tr>
<td>1931</td>
<td>.44</td>
<td>.21</td>
<td>5.64</td>
<td>13,075,908</td>
</tr>
<tr>
<td>1932</td>
<td>.23</td>
<td>.15</td>
<td>3.21</td>
<td>12,518,000</td>
</tr>
<tr>
<td>1933</td>
<td>.26</td>
<td>.21</td>
<td>3.37</td>
<td>11,970,000</td>
</tr>
</tbody>
</table>

1Compiled from reports of the Crop Reporting Board of Iowa, U. S. Dept. of Agr., Bull. of Agr. Ec.

Includes corn, oats, wheat, barley, rye, flaxseed, timothy seed, clover, soybeans, potatoes, sweet corn, pop corn, buckwheat, fruit crop and garden truck.
Fig. 2. The decline in United States farm prices and the response that farmers have shown in their production of selected classes of livestock during the depression.

nearly three times higher, and taxes about twice as high as before 1914. The farm mortgage—amounting to more than a billion dollars in Iowa alone—even though it represents capitalized rent, once it is assumed as a contractual obligation tends to force the producer to maximize his receipts. This form of economic pressure, in a period such as the present, frequently forces farmers to mine their soil with complete disregard of all principles of soil management or the future needs of society. Nor is the farmer to blame. Enough income must be forthcoming to meet interest and amortized payments on the principal when they fall due. For, if he fails to meet these obligations, he loses all that has been invested in the enterprise through forced liquidation.

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8 Ezekiel and Bean. Economic Basis for Agricultural Adjustment Act. (Cited earlier in footnote 3.)

9 The reader will perceive that I refer here to economic rent, namely, the value of the productivity of a given piece of land over no rent land, sometimes referred to as site value.

10 Insolvent farmers in turn lead to bank failures. That the agricultural regions were depressed before 1929 is indicated by the large number of bank failures in rural regions all through the years since 1920. By the end of 1930 the number of small country banks in operation had fallen to less than two-thirds of the 1922 level. Moreover, deposits were either drawn down materially, destroyed or tied up.
Farm Cannot Shut Down

In spite of the collapse of farm prices it is evident that agricultural production has been maintained throughout. Farmers do not curtail their crops or their livestock. Conversely, directors of factories stop their engines and close their doors. Their workers are discharged, and thus forced to join the ranks of the unemployed. The farm, however, when prices fall, no matter to what ruinously low depths, is not allowed to stand idle. Farm products continue to flow to market and must be handled. Unless they are wasted, they must be stored, processed or moved into consumption. The reasons for this are many. The fact, however, that in present-day economic society, factories stop while farms continue to produce, when prices collapse, is an important phenomenon that should be considered when establishing policies, the aim of which is to overcome a depression. The belief, that in the short run, low prices for farm products automatically reduce supplies to a point where prices again cover cost of production is certainly not borne out by experience.

If the general depression in trade were the only factor responsible for the maladjustments between farm supplies and demand, it would seem much more reasonable, in view of the fact that agricultural production has increased but slightly, to expand industrial production rather than to attempt to curtail farm production. In looking at production alone, the cure for the economic disease referred to as a trade crisis is a matter of bringing about industrial activity so non-agricultural producers have more to exchange for the goods and services they want.

THE CONSUMPTION SIDE

Is our surplus problem in agriculture essentially due to reduced consumption growing out of unemployment and smaller industrial payrolls? How significant is the close relationship that seems to exist between the prices that farmers receive and the wages which workmen are paid? To what extent is the prosperity of agriculture dependent largely upon the prosperity of our manufacturing industries? These and related questions are considered in the following paragraphs.
Kinds of Demand

In discussing the demand for farm commodities, it is necessary to distinguish between food and non-food products. The demand for butter and bacon, for example, is much different from the demand for cotton and flaxseed. The first represents foods, and the other non-food commodities. Foods have certain characteristics as a class. They are consumed regularly, and the total amount consumed does not change much—depression or prosperity. Whether a New Era is heralded or a Banking Holiday proclaimed, the human stomach neither contracts nor expands appreciably. We want and need food three times a day; and, in most western countries most people reach a point of satiation in food, thrice daily. Food is usually the last item in the family budget to be curtailed. It is because of these characteristics that the demand for food is referred to as being inelastic in character.\(^\text{11}\) Although the demand for individual food products varies in elasticity the demand for food products as a whole is strictly inelastic.

Raw Materials Made From Farm Products

The demand for farm produce used as raw materials in making non-food products is much more elastic than the demand for food. Accordingly, the quantity of cotton, wool, linen and silk; jute and hemp; flaxseed and soybeans, which is used, is much more subject to the influence of booms and depressions than is the demand for food.

The purchase of most manufactured goods can be postponed readily, in bad times.\(^\text{12}\) Take for example, the demand for linseed oil. During hard times, new buildings are not constructed and old buildings, although badly weatherworn, are not repainted. Painting comes to a standstill. Linseed oil goes begging for a market. Consequently, the amount of flaxseed that is crushed for oil drops precipitously. Thus we find that

\(^{11}\) Technically, a demand curve is said to be inelastic when the proportionate change in price is greater than the change in quantity taken. When a one-percent increase or decrease in price results in less than a one-percent change in the amount that buyers will take, the demand is inelastic in character. The demand for salt, sugar, bread are examples. A demand curve is elastic when a one-percent variation in price results in more than a one-percent change in quantity taken.

the domestic disappearance of flaxseed is highly sensitive to business conditions. Take another illustration—an old suit of clothes or an old automobile tire usually can be used a while longer than is customary. Then, too, fabrics are not as strictly necessities of life as is food, and because fabrics are durable, the quantity that is utilized during any given period of time varies considerably, depending upon the state of business.

Some farm products provide both raw materials and food-stuffs. Cattle supply meat and leather; sheep give us mutton and wool; and, while the bulk of the corn crop is used as feed, some is consumed as food and some is made into industrial products. The demand for agricultural commodities as a whole depends upon how much of the total production is composed of foods and how much of it is used as raw material. The ratio between these two for the United States is shown by the sources of income of farmers. The cash income from farm production during 1924-28 averaged 9,739 million dollars of which 1,960 million dollars or about one-fifth came from the sale of non-food products. Roughly, then, 20 percent of our farm products may be characterized, as having elastic demands, while the demands for the rest are inelastic. Accordingly, we would expect the consumption of about four-fifths of our farm production to change relatively little, in spite of depression.

Consumption of Farm Produce During Boom and Depression

Figure 3 gives the per person changes in domestic consumption of 10 selected farm commodities for the period from 1927 to 1933. This chart is constructed so that the average level of consumption that prevailed during 1927-29 equals 100. Hence, the chart gives the relative (in percentage of 1927-29) yearly variations in consumption since 1927.

First take the non-food group. The per person disappearance of cotton in 1932 was down to 70 percent of its 1927-29 level; flaxseed, even more sensitive to depression, dropped to less than half (41 percent); and, tobacco which was off slightly

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13 U. S. Dept. of Agr., Yearbook of Agriculture. 1932. p. 891. A sum of $182 million dollars credited to forest products was deducted from the total figure appearing in the Yearbook.

14 The non-food group includes cotton lint, cottonseed, tobacco, wool, flaxseed, horses and mules, mohair, and broomcorn.
Fig. 3. Relative changes in the level of consumption of 10 selected foods in the United States from 1927 to 1933.

less stood at 84 percent. During prosperity (1925-1929) we used annually 32 million acres of non-food products in the United States compared with only 24 million acres during the depression period (1932-33), a decline of 25 percent.

In contrast with the non-food group of farm commodities, the level of consumption of food has not declined during the depression. On the basis of the per person consumption of the prosperous period of 1925-29, it is estimated that it would require about 284 million acres of crop land at average yields to supply the food for the present population of 125 million people. A study of the level of consumption that has obtained during the depression period of 1932-33, shows that we consumed an amount of food requiring exactly the same crop acreage as would have been needed for the 1925-29 level of consumption.¹⁵ While it goes without saying that many of our

¹⁵ H. R. Tolley. The Problem of Long-Time Agricultural Adjustment. An address at Farmers' Week, Ohio State University, Columbus, Ohio, Jan. 31, 1934. Mr. Tolley's data are based on an interesting study being made by F. F. Elliott. Mr. Elliott is trying to ascertain the crop acreage that would be required to produce enough food to give the American people certain diets worked out by the home economic experts: (1) A restricted diet for emergency purposes, (2) an adequate diet at minimum cost, (3) an adequate diet at moderate cost, and (4) a liberal diet.
rural as well as urban people have not and cannot afford an adequate diet, it is true that the depression has not reduced the level of consumption of food from that which prevailed just prior to 1929.

The consumption of certain foods, of course, has declined, but that of others has increased. There is plenty of evidence of substitution. But there always is, for housewives tend to buy the cheap and abundant, and economize on the dear and the scarce foods. For instance, the consumption of oranges and grapefruit has gone up considerably while that of lemons, apples and bananas has declined sharply. Or take lard and its substitutes. The consumption of lard has increased during the depression, while that of vegetable oils and shortenings has dropped nearly a fourth. Consumption of rice and sweet potatoes has increased; that of flour and potatoes has dropped. More will be said about selected commodities below. It is evident that the changes in the amount of particular foods consumed throws little light upon what happens to the diet of consumers in general. It is quite apparent that particular increases or decreases are due, chiefly, to changes in production. A large crop, especially of perishable produce, or a heavy run of livestock, is almost always followed by an increase in consumption. Unless wasted or stored, it must be sold at some price. Short crops, on the other hand, require the curtailment of consumption. Short run shifts in per capita consumption between foods, therefore, whether during depression or prosperity, are the result primarily of variations in supply.

That the level of food consumption as a whole has not changed materially since 1927 is further illustrated in fig. 3. Take meats: while the per capita consumption of beef and veal declined, until last year, that for lamb and mutton went up over 20 percent. But for all meats taken together, there was very little change. The slight decline that is shown is chiefly attributable to the increase in non-commercial and farm slaughter, which does not appear in our federal statistics. The level of flour consumption has receded which is in line with the post-war trend in the use of bread. Dairy products have held fairly steady, although they have not advanced as much as has been their tendency since the war. Dr. O. E. Baker points
### TABLE 2. APPARENT PER CAPITA CONSUMPTION IN UNITED STATES OF 10 SELECTED FARM COMMODITIES, 1927-1933.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cotton (lbs.)</th>
<th>Flaxseed (lbs.)</th>
<th>Leaf tobacco (lbs.)</th>
<th>Cheese (lbs.)</th>
<th>(1) Creamery butter (lbs.)</th>
<th>(2) Total meats (lbs.)</th>
<th>(2) Pork including lard (lbs.)</th>
<th>(2) Beef and veal (lbs.)</th>
<th>(2) Lamb and mutton (lbs.)</th>
<th>(3) Wheat flour (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1927</td>
<td>31.32</td>
<td>1.06</td>
<td>6.24</td>
<td>4.15</td>
<td>12.50</td>
<td>106.3</td>
<td>56.73</td>
<td>45.34</td>
<td>4.26</td>
<td>177.7</td>
</tr>
<tr>
<td>1928</td>
<td>27.43</td>
<td>1.01</td>
<td>6.22</td>
<td>4.12</td>
<td>12.43</td>
<td>105.7</td>
<td>61.15</td>
<td>40.14</td>
<td>4.37</td>
<td>179.9</td>
</tr>
<tr>
<td>1929</td>
<td>28.98</td>
<td>1.01</td>
<td>6.43</td>
<td>3.78</td>
<td>12.82</td>
<td>104.5</td>
<td>60.06</td>
<td>39.80</td>
<td>4.52</td>
<td>175.5</td>
</tr>
<tr>
<td>1930</td>
<td>21.81</td>
<td>0.69</td>
<td>6.22</td>
<td>3.97</td>
<td>13.09</td>
<td>100.2</td>
<td>56.16</td>
<td>38.76</td>
<td>5.27</td>
<td>166.6</td>
</tr>
<tr>
<td>1931</td>
<td>21.95</td>
<td>0.69</td>
<td>5.98</td>
<td>4.49</td>
<td>13.73</td>
<td>100.9</td>
<td>59.86</td>
<td>38.48</td>
<td>5.56</td>
<td>165.0</td>
</tr>
<tr>
<td>1932</td>
<td>20.06</td>
<td>0.42</td>
<td>5.32</td>
<td>4.23</td>
<td>13.08</td>
<td>103.4</td>
<td>57.65</td>
<td>40.01</td>
<td>5.39</td>
<td>166.4</td>
</tr>
<tr>
<td>1933</td>
<td>25.73</td>
<td>0.47</td>
<td>4.7</td>
<td>4.18</td>
<td>13.02</td>
<td>103.4</td>
<td>57.65</td>
<td>40.01</td>
<td>5.39</td>
<td>166.4</td>
</tr>
</tbody>
</table>


*Apparent consumption, including only meat produced under federal inspection, has been computed by the U. S. Dept, of Agr., Bur. of Agr. Ec., in Survey of Current Business, June, 1933, p. 19. Estimates of farm butter production are excluded, actual factory output being taken, together with imports and exports and the difference in cold storage holdings.

*For years (July-June).

out that the consumption of dairy and sugar products increased notably following prohibition and that it is probable that these products will decline somewhat with the return of beer.

The following conclusions appear reasonable with reference to the short run or first phase of the farm problem.

1. Farmers have continued to produce during the depression at the same rate at which they did during the more prosperous period that preceded 1930.

2. The American people, as a whole, have continued to consume as much food per person since the depression set in as during the prosperous period of 1925-29. The fact that the level of consumption has not declined within the United States during the depression is highly important, since food represents about four-fifths of our total farm production.

3. The domestic disappearance of non-food farm products, in contrast, has been reduced about 25 percent because of the depression. Cotton, cottonseed, tobacco, wool, flaxseed, horses and mules, mohair and broomcorn, the leading non-food products, make up, approximately one-fifth of the output of our farms.
### TABLE 3. ESTIMATED DOMESTIC STOCKS OF SELECTED FARM COMMODITIES.

(In thousands of units)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Pre War</th>
<th>1930</th>
<th>1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat (bu.)</td>
<td>96,872(^1)</td>
<td>242,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Cotton (bales)</td>
<td>1,366(^1)</td>
<td>2,312</td>
<td>7,918(^2)</td>
</tr>
<tr>
<td>Lard (lbs.)</td>
<td>63,304(^3)</td>
<td>82,098</td>
<td>132,297</td>
</tr>
<tr>
<td>Cottonseed oil (lbs.)</td>
<td>335,993(^3)</td>
<td>227,837</td>
<td>676,163</td>
</tr>
<tr>
<td>Apples (bu.)</td>
<td>11,229(^4)</td>
<td>23,902</td>
<td>21,393</td>
</tr>
<tr>
<td>Pork (lbs.)</td>
<td>420,736(^5)</td>
<td>620,186</td>
<td>627,323</td>
</tr>
<tr>
<td>Beef (lbs.)</td>
<td>147,811(^6)</td>
<td>103,883</td>
<td>79,172</td>
</tr>
<tr>
<td>Mutton and lamb (lbs.)</td>
<td>4,976(^2)</td>
<td>5,317</td>
<td>3,193</td>
</tr>
<tr>
<td>Poultry (lbs.)</td>
<td>32,184(^4)</td>
<td>140,723</td>
<td>123,479</td>
</tr>
<tr>
<td>Eggs (doz.)</td>
<td>43,170(^5)</td>
<td>67,110</td>
<td>74,700</td>
</tr>
<tr>
<td>Butter (lbs.)</td>
<td>48,977(^7)</td>
<td>81,935</td>
<td>111,210</td>
</tr>
<tr>
<td>Cheese (lbs.)</td>
<td>41,594(^8)</td>
<td>86,075</td>
<td>91,994</td>
</tr>
</tbody>
</table>

\(^2\) Jan. 1, 1916.
\(^3\) Jan. 1, 1917.
\(^4\) Jan. 1, 1922.
\(^5\) Jan. 1, 1927.
\(^6\) Year beginning Aug. 1, 1932.

From the above summary statement it would appear that the large accumulated stocks of non-perishable foodstuffs in the United States are not primarily the result of low wages and unemployment. Most of these stocks were already excessively large when prices collapsed. Whatever increase there has been since 1929 is not to be attributed to reduced consumption, as a whole, but to the further shrinking of foreign demand and, in some cases, to increased production. It also follows, that if, and when, business conditions improve, with its better payrolls and more employment, the total amount of food consumed in the United States is not likely to increase by more than the increase in population.

Conversely, the large stocks of non-food farm produce are partly the result of reduced domestic consumption. The domestic carryover of cotton, for example, rose from 2.3 million bales in August, 1930, to 7.9 million bales in 1932. Moreover the amount of cotton, tobacco and flaxseed that will be used by textile mills, tobacco houses and oil crushers is likely to increase considerably with improvement in business. In fact, the disappearance of cotton attained practically normal proportions during the last half of 1933.

### FARM PRICES AND INDUSTRIAL WAGES DURING THE DEPRESSION

While the amount of food that the American people eat during prosperous and depression periods does not vary, the prices
paid for food and, hence, the income which the farmers receive, appear to be closely connected with the rise and fall of wages. Since most farm products which are produced for sale and which go into domestic consumption are used by non-farm people, the prices they pay, presumably, reflects their purchasing power. Since much of the purchasing power of our city population comes directly from manufacturing, any curtailment or expansion of industrial activity changes the ability of urban people to buy food. Payrolls and food prices, in a general way, have gone hand in hand. But, both are parts of an economic system, sufficiently large to dominate the economic position of its several components.

It should be made clear, therefore, that although farm incomes have declined about as much as wages have fallen, since 1929, it does not follow that wages which workers receive is the only, or even the chief, determinant of farm prices in the United States. Take first the non-food group of farm products. Farmers, as well as city people, are buyers of the finished products that are made from non-food farm produce. When farmers curtail the painting of their buildings, as in recent years, it very materially reduces the demand for linseed oil. Cotton and woolen goods are important in the purchases of both rural and city people. In the case of foods, agriculture itself is an important factor in the demand. Whether farmers use butter or oleomargarine depends, among other things, upon their income. Whether cotton planters produce their own hogs, or buy the fat backs and sow bellies which they need, from the Corn Belt, depends very largely upon cotton prices. Because of the regional specialization that characterizes American agriculture, individual farmers are far from being self-sufficient in food. Therefore, in food as well as in non-food products, the cotton, wheat, corn, tobacco, fruit, dairy and livestock producers are all interdependent. But the distortion of prices and costs caused by the drastic decline in prices has been breaking down regional specialization and the widespread interchange of farm products. This breaking down of regional specialization is most acute in the bulky products, and is primarily due to the inflexibility of transportation costs. Farmers in cash crop areas, for example, have expanded their acreage of food and
Thus it is clear that the well-being of one farm group affects the economic status of the other, both in what is produced and in what is purchased for consumption.

Moreover, in considering the short run phase of the farm situation, it is highly important not to overlook or underestimate the influence of the export market upon domestic farm prices. The prices which farmers receive from many of their leading crops and livestock products, even though the bulk of the production is consumed in this country, is determined, primarily, by world prices. Farm prices of export products have dropped much more than the farm prices of the remaining products. At the beginning of 1933, farmers dependent upon foreign outlets were selling their produce for about 40 percent of pre-war prices, while those producing commodities on a domestic or import basis were receiving about 80 percent of their pre-war prices. The excessive accumulated stocks of farm produce are largely in exportable products. This aspect of the farm problem is discussed in the next section.

SUMMARY OF THE SHORT RUN OR DEPRESSION PHASE

Without attempting to analyze the several factors that have contributed most to bringing about the drastic decline in prices and trade, it is possible from the preceding discussion to observe certain economic relationships between agricultural and non-agricultural groups. Food prices and farm prices are low partly because wages are low and partly because farm production has not been contracted during the depression. Since food, however, is the last item in the family budget to be economized, it is reasonable to suppose, that had the supplies of food been curtailed a much larger share of the average family budget would have gone for food. But instead what actually has happened, is that, by and large, the American people have spent less of their income for food since 1929 than during the more prosperous years.

16 The changes in regional specialization have been most marked in vegetables and other specialty crops. From 1929 to 1933 the acreage of canning crops declined 31 percent while the acreage in truck crops increased 15 percent and the acreage in vegetable gardens for nearby sale also increased materially. Ezekiel and Bean. Cited earlier. p. 13.

While it is true that a large number of families in the United States have been forced to curtail their expenditures most drastically and have thereby been forced to a poorer diet, others, in fact many large occupational groups, especially those having fixed sources of income, have found the food which they have bought costing them relatively less than before the depression. This latter group has improved its diet enough to offset the curtailment in diet among those less fortunate. The fact that food prices dropped more than our national income, at least suggests that food for the American people as a whole, has been cheaper (requiring less of the total budget) during the depression than prior to 1930. This very largely explains why we have not reduced our diet, as a whole, in spite of the worst depression in our history.

Nor are the American people likely to eat more, if, and when, prosperity returns. The reverse of the depression process, in all probability, will take place. Those groups in our society whose incomes are least affected by rising prices will curtail their consumption of food somewhat. Others, however, whose incomes rise as fast or faster than food prices, will improve their diet. This is not to say that the purchasing power of wage earners is not an important factor in determining how high food prices may go before the wage earner, as a consumer, is forced to a poorer diet. It is certainly true that profitable farming requires consumers who are not only willing but also able to buy.

Attention is once more called to the fact that the gigantic stocks of farm produce, other than non-food commodities, that have accumulated in this country are not primarily the result of reduced wages, unemployment and business depression in our cities. But, the pressure of these unprecedented stocks upon both domestic and foreign prices partly explains why it has not been necessary for consumers, as a whole, to spend a larger proportion of their income in buying food. But more important in evaluating the fundamental policies of the agricultural adjustment act, is the fact that a return of better times in business generally will not relieve agriculture of its burdensome surpluses of foodstuffs. Farm prices would undoubtedly increase, but farm supplies would still continue to be out of ad-
justment with demand, here and abroad. Agriculture would still continue to operate under a cloud. The sought-for balance between agricultural and industrial production would not have been attained. To get at the causes for the accumulated stocks, it is necessary to understand fully the foreign situation.

DISLOCATIONS IN AGRICULTURAL PRODUCTION AND TRADE GROWING OUT OF THE WORLD WAR

Our discussion thus far has dealt only with the impact of the recent trade crises upon agriculture. Large parts, if not all, of agriculture was indeed sick long before 1929. Depression, especially among those farmers dependent upon foreign outlets for the sale of their produce, had been more or less chronic since the war. Unrest among the farmers, not to say a spirit of revolt, grew out of this condition.

The unfavorable economic position of farmers generally was attributed to many and varied causes. Accordingly, an almost equal number of reform proposals were offered to aid agriculture.

Farm Relief From 1920 to 1929

The history of agricultural reform which followed the sharp price decline of 1920 is crowded with one relief plan after another. Some of these plans were considered by Congress. A few of them were enacted.

First came tariff legislation. Farmers generally believed that the sudden collapse of farm prices, in the fall of 1920, which continued into 1921, was due largely to the then pending imports, chiefly of Canadian and Argentine origin. Consequently, Congressmen from the farm states at once insisted on higher tariffs; and much to their surprise, representatives of the industrial East were only too glad to join hands with the spokesmen of agriculture in a general raising of tariffs. The Emergency Tariff Act was passed in 1921. It was soon followed by more tariff increases in the Fordney-McCumber Tariff Act of 1922. But the prices of the principal farm products—cotton, wheat and hogs; tobacco, rice and apples; rye, prunes and the coarse feed grains, all strictly on an export basis—strangely enough, did not show any favorable price response to the
change in tariff policy. The domestic producers, however, of certain chemicals and dyestuffs prospered from the upward revision of duties.

**McNary-Haugen Plan**

Next came the McNary-Haugen proposal which was based upon the equalization fee principle. Twice it received the approval of both houses of Congress, but on each occasion it was vetoed by President Coolidge. The export debenture plan was also considered. Many lesser proposals to aid farmers were considered. Among those enacted into law was the Purnell Act passed in 1925. In addition to these national measures, conferences were called, particularly by governors from agricultural states. Executive committees were set up, and businessmen, through the National Industrial Conference Board, also studied the economic problems of the farmer.

**Farm Board**

In 1929, largely as a result of political compromises, an act was passed providing for the Federal Farm Board. The purpose of the act was "to promote the effective merchandising of agricultural commodities" so that agriculture would be "placed on a basis of economic equality with other industries" and to "protect, control and stabilize" the marketing of agricultural commodities. The same Congress enacted the Smoot-Hawley Tariff Act. In passing, it should be noted that the Farm Board started its stabilization operation, ironically enough, just at the time when prices of raw materials, the world over, started to collapse.

From the preceding sketch of the plans that were proposed to aid agriculture, plans that were prominent prior to 1929, it is evident that the representatives of agriculture were reflecting the discontent of farmers; for, as already indicated, farmers generally held that they were operating at a disadvantage compared with other important economic groups. Moreover, should one take the time to study the statistics pertaining to farm income and farm purchasing power, one would soon discover that most farm families have received relatively low incomes since 1920. While the total national income dropped from about 74 billion, in 1920, to 63 billion
dollars in 1921, a drop of 15 percent; farm income dropped from 11 billion to less than 7 billion dollars, during the same period, a decline of 36 percent. Following this the estimated national income increased steadily until in 1929 it stood at 91 billion dollars. Farm income, however, showed but little improvement. During the boom period—1927 to 1929—the yearly farm income was only slightly more than 8 billion dollars. That American agriculture did not benefit materially from the recovery and prosperity of the decade following the close of the war is even more forcefully shown when we compare the proportion that the farm income represented of the total national income. In 1919 the farm income made up over 18 percent of the total; it fell to less than 15 percent in 1920; it

18 The more critical reader undoubtedly will not be satisfied with the general statement that just because the share of the national income that has flowed to agriculture has declined, therefore, it has not prospered as much as the remainder of society. The costs of production in farming may have been reduced and/or the number of farms declined enough to more than offset the relative contraction in total income. Under such circumstances instead of less buying power the individual farmer would have increased his purchasing power, hence his economic position. In all probability farmers in some sections of the United States and individual farmers in nearly every region have not lost but gained ground, even through the depression. These, however, have been the exception rather than the rule. The decline in farm real estate values, the increase in farm mortgages and taxes, the general lack of farm improvements since 1914 are all prima facie evidence that for some reason or other agriculture, taken as a whole, had seen better days. The newly opened wheat areas made possible by the combine, and farmers who purchased their farms at greatly discounted prices, of course, were among the exceptions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimate of national income1</th>
<th>Farm income</th>
<th>Farm income as percentage of national income2</th>
<th>Per capita income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>million $</td>
<td>million $</td>
<td>percent</td>
<td>Non-agricultural group</td>
</tr>
<tr>
<td>1919</td>
<td>65,949</td>
<td>12,200</td>
<td>18.5</td>
<td>899</td>
</tr>
<tr>
<td>1920</td>
<td>73,999</td>
<td>11,026</td>
<td>14.9</td>
<td>988</td>
</tr>
<tr>
<td>1921</td>
<td>63,371</td>
<td>6,971</td>
<td>11.0</td>
<td>844</td>
</tr>
<tr>
<td>1922</td>
<td>65,925</td>
<td>7,318</td>
<td>11.1</td>
<td>926</td>
</tr>
<tr>
<td>1923</td>
<td>74,537</td>
<td>8,028</td>
<td>10.8</td>
<td>939</td>
</tr>
<tr>
<td>1924</td>
<td>77,135</td>
<td>8,331</td>
<td>10.8</td>
<td>978</td>
</tr>
<tr>
<td>1925</td>
<td>81,931</td>
<td>9,050</td>
<td>11.1</td>
<td>982</td>
</tr>
<tr>
<td>1926</td>
<td>84,238</td>
<td>8,087</td>
<td>9.6</td>
<td>903</td>
</tr>
<tr>
<td>1927</td>
<td>87,376</td>
<td>8,291</td>
<td>9.5</td>
<td>958</td>
</tr>
<tr>
<td>1928</td>
<td>88,283</td>
<td>8,210</td>
<td>9.3</td>
<td>1,001</td>
</tr>
<tr>
<td>1929</td>
<td>91,405</td>
<td>8,226</td>
<td>9.0</td>
<td>574</td>
</tr>
<tr>
<td>1930</td>
<td>81,295</td>
<td>6,504</td>
<td>8.0</td>
<td>717</td>
</tr>
<tr>
<td>1931</td>
<td>67,000</td>
<td>4,600</td>
<td>7.0</td>
<td>561</td>
</tr>
<tr>
<td>1932</td>
<td>52,500</td>
<td>3,675</td>
<td>7.0</td>
<td></td>
</tr>
</tbody>
</table>


2 Nat'l Bur. of Ec. Research and U. S. Dept. of Agr. The percentage is based on the estimate of farm income included in the estimate of national income, and not those shown in the table.
3 Comparable percentages for 1929-32 are not available but current data indicate that in 1931 and 1932 the farmers' share of the national income had declined to about 7 percent.

stood at about 11 percent from 1921 to 1925 and declined to 9 percent by 1929. Moreover, it is estimated that for 1931 and 1932 the farm income represented only 7 percent of the national income. In other words, the proportionate share of the national income which farmers received declined in the course of 10 years—1919 to 1929—from more than 18 percent to 9 percent of the total. The farm population represented 30 percent of the total population in 1919 and about 25 percent in 1929. In other words, of the total purchasing power annually available to the people of this country, the share which farm people obtain as a group was reduced by one-half during the decade following the war. In this period the number of people on farms declined only slightly, from about 31.6 million in 1919 to 30.3 million in 1929. The agricultural depression was with us long before the slump in trade, which started in 1929, and which today so overshadows our perspective. It is, therefore, highly important that we understand what was responsible for the depressed state of agriculture prior to 1929.

19 The total population is estimated at 105,062,000 for 1919 and 121,526,000 in 1929.
AGRICULTURAL PRODUCTION AND THE WORLD WAR

The agricultural production of Europe fell off sharply during the World War. The reasons for this decline were many and need not detain us except to mention that Russia, one of the great food exporters, disappeared from the world’s market. Not only did European production drop, but, the demand for food in the belligerent countries increased. Agricultural exports from the United States more than doubled. Europe needed food at any price. High food prices along with the immediate prospects for even higher prices, coupled with the pressure of an emergency—winning of the war—caused not only farmers but also governments to exert every possible effort to increase agricultural production. As a result, more acres were added to the farm plant of the United States and of other non-European countries. Farms were geared up to higher production, but even so, from 1914 to 1920, the decline in agricultural production in Europe was faster than the increase outside of Europe. Nevertheless, it was during the war years and the brief post-war inflationary period that farmers, induced by the then strong foreign demand, expanded. Since then foreign demand has shrunk below pre-war level, yet farmers in the surplus countries have not adjusted their production accordingly.

Shifts in Crop Acreage

The story of what actually has taken place in the leading agricultural countries of the world because of the World War and because of subsequent events is graphically shown in fig. 5. Note first the changes in total crop acreage from 1909-13 to 1920. Land devoted to crops in Europe, counting Russia, had declined over 100 million acres. Meanwhile, the acreage of important crops in the United States, Canada, Argentina and Australia, had increased nearly 60 million acres. Up until 1920, therefore, it was chiefly a replacement proposition. The notable expansion in the non-European countries was more than offset by the decline suffered by war-torn Europe. The total crop acreage of the leading agricultural countries was materially reduced. Up until 1920, then, demand, if you please, exceeded supply. Prices were high. Farming was
Fig. 5. Changes in total crop acreage, wheat acreage, number of hogs slaughtered of leading European and non-European countries since the World war.

profitable. Capital was attracted. Grass land was put to crops. Old land was recapitalized upward. All in all, it was the natural response to a strong active demand for food.

Now follow the two curves in the first section of fig. 5 through to 1932. From 1920 to 1925, again including Russia, Europe increased its crop land 78 million acres. The dislocations in European agriculture brought about by the war were rapidly being corrected. Rehabilitation was in progress. Recovery was under way. But, whereas the amount of land in crops in Europe was approaching the pre-war level, the additional crop land that had been added in the non-European countries by the impetus of high war prices and the emergency demand for food continued to stay in farms.

Nor were the dislocations in world agricultural production corrected during the 5-year period that followed 1925. They were, if anything, further exaggerated. The crop acreage of Europe, not counting Russia, had got back to pre-war basis, while Russia had added over 20 million acres to its agricultural plant, thus increasing the area of farm land in crops for Eu-
TABLE 5. CHANGES IN TOTAL CROP ACREAGE OF LEADING EUROPEAN AND NON-EUROPEAN COUNTRIES.¹
(In millions of acres)

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Canada</th>
<th>Australia</th>
<th>Argentina</th>
<th>Deviations from 1909-13 av.</th>
<th>Europe (excluding Russia)</th>
<th>Russia</th>
<th>Deviations from 1909-13 av.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1909-13 av.</td>
<td>290</td>
<td>99</td>
<td></td>
<td></td>
<td>0</td>
<td>250</td>
<td>282</td>
<td>0</td>
</tr>
<tr>
<td>1920</td>
<td>321</td>
<td>125</td>
<td></td>
<td></td>
<td>+57</td>
<td>210</td>
<td>215¹</td>
<td>-107</td>
</tr>
<tr>
<td>1925</td>
<td>321</td>
<td>125</td>
<td></td>
<td></td>
<td>-57</td>
<td>240</td>
<td>263</td>
<td>-29</td>
</tr>
<tr>
<td>1930</td>
<td>327</td>
<td>151</td>
<td></td>
<td></td>
<td>+89</td>
<td>250</td>
<td>303</td>
<td>+21</td>
</tr>
<tr>
<td>1932</td>
<td>320</td>
<td>140</td>
<td></td>
<td></td>
<td>-71</td>
<td>247</td>
<td>337</td>
<td>+52</td>
</tr>
</tbody>
</table>

²Estimated.

rope as a whole. But, to add to the agricultural difficulties of the world the land in crops in Canada, Argentina and Australia jumped 26 million acres between 1925 and 1930. Instead of shrinking, the crop land in the non-European countries continued to increase. The European demand was fast being satisfied by its own farmers, yet the non-European world added more rather than less crop land.²⁰

The explanation for the increase in crop acreage just noted, for the non-European countries, following 1925, is attributable largely to technical changes in farming. These technical developments were applicable very largely to farming on arable land. The combine had opened large areas of semi-arid land to the cultivation of wheat and other cereals. Technical developments in the arts of agriculture have been an important contributing factor to the agricultural maladjustments.

Nor did the crop acreage of the leading agricultural countries drop when the world slump set in. From 1930 to 1932, for which comparable data are available, Russia further expanded its farm plant by nearly 35 million acres. Consequently 1932 found Europe 52 million acres above the 1909-13 level, while the leading non-European countries had 75 million acres more in crops than before the war.

The area devoted to crops in Europe, including Russia and the four non-European countries under consideration, averaged, it is estimated, 921 million acres from 1909 to 1913. In 1932, these same countries had about 1,044 million acres, a 13 percent increase. The decrease in consumption, particularly

²⁰From 1920 to 1930 there was a considerable shift in the United States from less productive to more productive areas. The acres in farm land in eastern and some of the southern states declined while the acreage in the central states increased.

http://lib.dr.iastate.edu/bulletin/vol27/iss314/1
of wheat, because of the high cost of wheat in the deficit countries of Europe, resulting from trade restrictions, must also be considered. It has been estimated, that the countries of Europe that import wheat are consuming annually about 175 million bushels less than they had previously and that they are producing yearly about 150 million bushels more of wheat than they would have without governmental interventions.\textsuperscript{21}

\textbf{Influence of the War on Hog Slaughter}

The war practically liquidated the hog industry in central Europe. In 1914, over 19 million hogs were slaughtered in Germany; in 1919, slaughter dropped to less than 1 1/2 million. While the European hog industry was being liquidated, the number of hogs produced in the United States and Canada surged upward rapidly. Germany, Denmark and the Netherlands, the leading swine producing countries in Europe, slaughtered annually, from 1909 to 1913, slightly less than 20 million head. By 1918, the combined slaughter of these countries had fallen to less than 3 million; the following year it reached an even lower point when only 2 1/4 million hogs were slaughtered. At the close of the war, Europe was producing about one-tenth as many hogs for slaughter as it did at the outbreak of hostility. Consequently, the demand for American pork and lard was extraordinary. It was not until after the cessation of hostility that Germany could buy from us. At that time our exports of hog products expanded 200 percent, or the equivalent of 10 million hogs.

It was not until 1926 that the combined hog slaughter of the three leading European countries regained its pre-war volume. But once the hog industry of Europe recovered, it did not stop at its 1909-13 level. More and more hogs were farrowed and fed so that by 1931 European hog production was well over 50 percent above pre-war levels.

\textbf{Hog Expansion in America}

In contrast to the drastic decline in hog numbers in Europe, production in America was stimulated by the extraordinary

TABLE 6. CHANGES IN HOG SLAUGHTER IN LEADING EUROPEAN AND NON-EUROPEAN COUNTRIES.1
(Thousand Head)

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Canada</th>
<th>Deviations from 1909-13 av.</th>
<th>Germany</th>
<th>Denmark</th>
<th>Netherlands</th>
<th>Deviations from 1909-13 av.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1909-13 av.</td>
<td>31,759</td>
<td>4,280</td>
<td></td>
<td>16,404</td>
<td>2,503</td>
<td>875</td>
<td>+ 3,602</td>
</tr>
<tr>
<td>1914</td>
<td>32,532</td>
<td></td>
<td>+ 773</td>
<td>19,441</td>
<td>2,858</td>
<td>1,085</td>
<td>- 3,053</td>
</tr>
<tr>
<td>1915</td>
<td>35,381</td>
<td></td>
<td>+ 6,622</td>
<td>13,293</td>
<td>2,594</td>
<td>842</td>
<td>- 9,853</td>
</tr>
<tr>
<td>1916</td>
<td>43,084</td>
<td></td>
<td>-11,825</td>
<td>6,548</td>
<td>2,542</td>
<td>850</td>
<td>- 9,842</td>
</tr>
<tr>
<td>1917</td>
<td>33,910</td>
<td></td>
<td>+ 2,151</td>
<td>5,795</td>
<td>2,479</td>
<td>600</td>
<td>- 10,908</td>
</tr>
<tr>
<td>1918</td>
<td>41,214</td>
<td></td>
<td>+ 9,459</td>
<td>2,430</td>
<td>324</td>
<td>217</td>
<td>- 16,811</td>
</tr>
<tr>
<td>1919</td>
<td>41,812</td>
<td></td>
<td>+ 11,299</td>
<td>1,366</td>
<td>456</td>
<td>472</td>
<td>- 17,530</td>
</tr>
<tr>
<td>1920</td>
<td>38,019</td>
<td></td>
<td>- 6,814</td>
<td>3,024</td>
<td>930</td>
<td>648</td>
<td>- 15,180</td>
</tr>
<tr>
<td>1921</td>
<td>38,982</td>
<td></td>
<td>+ 5,297</td>
<td>6,825</td>
<td>1,641</td>
<td>1,362</td>
<td>- 9,954</td>
</tr>
<tr>
<td>1922</td>
<td>43,114</td>
<td></td>
<td>+ 12,457</td>
<td>6,923</td>
<td>2,215</td>
<td>865</td>
<td>- 9,779</td>
</tr>
<tr>
<td>1923</td>
<td>53,334</td>
<td></td>
<td>-28,351</td>
<td>5,830</td>
<td>3,414</td>
<td>1,785</td>
<td>- 8,763</td>
</tr>
<tr>
<td>1924</td>
<td>52,873</td>
<td></td>
<td>6,625</td>
<td>10,527</td>
<td>4,024</td>
<td>2,708</td>
<td>- 2,663</td>
</tr>
<tr>
<td>1925</td>
<td>43,043</td>
<td></td>
<td>-12,724</td>
<td>13,090</td>
<td>3,766</td>
<td>2,810</td>
<td>- 1,116</td>
</tr>
<tr>
<td>1926</td>
<td>40,636</td>
<td></td>
<td>-10,233</td>
<td>13,072</td>
<td>3,838</td>
<td>2,440</td>
<td>- 432</td>
</tr>
<tr>
<td>1927</td>
<td>43,633</td>
<td></td>
<td>5,965</td>
<td>17,279</td>
<td>5,098</td>
<td>3,041</td>
<td>+ 6,062</td>
</tr>
<tr>
<td>1928</td>
<td>49,795</td>
<td></td>
<td>+ 19,636</td>
<td>19,480</td>
<td>5,373</td>
<td>3,077</td>
<td>+ 8,148</td>
</tr>
<tr>
<td>1929</td>
<td>48,445</td>
<td></td>
<td>+ 18,153</td>
<td>17,232</td>
<td>4,394</td>
<td>2,415</td>
<td>+ 4,870</td>
</tr>
<tr>
<td>1930</td>
<td>44,256</td>
<td></td>
<td>-13,476</td>
<td>18,041</td>
<td>6,132</td>
<td>2,746</td>
<td>+ 7,137</td>
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<tr>
<td>1931</td>
<td>44,772</td>
<td></td>
<td>6,187</td>
<td>20,520</td>
<td>7,320</td>
<td>3,900</td>
<td>+11,968</td>
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<tr>
<td>1932</td>
<td>45,244</td>
<td></td>
<td>7,504</td>
<td>18,948</td>
<td>7,500</td>
<td>3,900</td>
<td>+10,566</td>
</tr>
</tbody>
</table>


Demand of Europe for food. While it is true that the general trend in livestock numbers both in the United States and Canada was upward, and while allowance must also be made for the periodic upward and downward swings in hog production referred to as the hog cycle, it, nevertheless, is very apparent that the American hog industry responded rapidly to the high prices of the war period.

In 1914, the domestic federally inspected slaughter was about 32 million hogs. In 1916, we had increased to 43 million. Canadian hog slaughter also increased sharply. Figure 5 indicates clearly that during the war period European hog production fell more rapidly than it increased in America. Demand, borne out of the emergency, had expanded sharply; supply increased more slowly. At the close of the war central Europe found itself facing a famine, particularly in meat. Our pork and lard were needed most urgently. As a result, the peak in the foreign demand for pork and lard came immediately after the close of the war. Exports of hog products from the United States during 1919 were equivalent to more than 15 million hogs. This was 10 million more than before the war. The expansion in exports at that time was considerably increased.
greater than the increase in domestic production. This may be taken as further evidence that the pressure of high prices had its origin in the European demand and that supplies were lagging in their adjustment.

Observe, also, that it was not until about 1922 that hog production in America had increased enough to replace the decline in number of hogs slaughtered in Europe. Up until that time, the combined slaughter of Europe and America was less than pre-war. Following this, however, Europe rapidly regained its former level of slaughter, and as in the case of land devoted to crops, the hog industry in America, stimulated by the high prices of the war, did not contract in spite of the recovery of the hog industry in Europe and the disappearance of the foreign demand. In fact, today with the exports of hog products less than before the war, and only about one-third as large as the 1918-1919 level, the American farmers continue to produce as if there had been no change in the hog situation in Europe.

Non-Contractability of Agricultural Production

Temporarily, the World War gave us extremely profitable foreign markets in which to sell our surplus foodstuffs. Profits and patriotism, during the war, both operated to bring about agricultural expansion. But now that Europe has rehabilitated its farms, both crops and livestock, it no longer needs as much of our food as formerly. Yet the crop acreage that was added and the livestock enterprise that was developed, during and immediately after the war, in America, and elsewhere, continues in production. It was indicated earlier that land once put under plow is abandoned very slowly. Livestock production, although more contractable than crop acreage, nevertheless resists liquidation most stubbornly.

It cannot be emphasized too strongly that changes in agricultural supplies are essentially a one-way affair. Farming, especially in the newer regions, expands readily, but it contracts only under tremendous economic pressure and during a general depression, not at all.

How low and how long must farm prices stay down in order to actually reduce the total agricultural production of the
United States, let us say one-tenth? After 13 years of more or less chronic depression there are as yet no signs that any significant contraction is under way. How, then, can the dislocations in agricultural production growing out of the world war be corrected? It is this costly inheritance of war that we must face. It certainly has not been solved. Are more low prices the cure? A return of industrial prosperity with better wages and more jobs will improve the domestic demand for food, inasmuch as it will increase the purchasing power of a relatively large number of consumers. But it will not, of itself, correct the maladjustments in agricultural production that were ushered in by the war. The agriculture of the world is sick and has been for 15 years. Can the United States attain the elements of a healthy agriculture independent of the rest of the world?

It is highly important to keep in mind in determining a policy that will solve the agricultural problem, that a boom in domestic business does not mean that England, Germany, France and other leading food deficit countries will need more lard, wheat, apples or tobacco. It is true that foreigners may take more cotton; in fact, they already are buying more. But what about the important food exports from America? This export group still dominates American farming. It still sets the tempo of our agricultural wellbeing. It is this group that is tied inescapably into the price structure of the world. Changes since 1914 in carryover, stocks on hand and acreage in cultivation, all point to serious dislocations in agricultural production. The World War forced too much of our production resources into farming, in view of what has transpired in the deficit food areas of the world since then. These dislocations must be faced frankly and squarely. Their solution is not easy.

It is this phase of the farm problem, the long run aspects of the agricultural depression, that the agricultural adjustment act is designed primarily to meet. For, certainly, in view of what has transpired since the World War our national farm plant is too large.

22 There has been contraction in some sections of the United States, as noted in footnote 20. During the more prosperous period in business a considerable acreage in the eastern and southeastern states was abandoned for better opportunities in the cities. This contraction, however, has affected commercial agriculture very little.
THE DECLINE IN AGRICULTURAL TRADE AS RELATED TO WORLD TRADE BARRIERS

It is not hard to understand why the crop acreage and livestock production, added as consequences of the war, have not been discontinued. But it is not so easy to explain why Europe has become much more self-sufficient in foodstuffs than before the war. The notable expansion in Russia is, of course, explainable. But how are we to account for the increased agricultural production in the food deficit countries of Europe? More important still, why should Europe today try to produce all of her own food and, consequently, import as little as possible? Certainly this is quite different from pre-war conditions when England, Germany, France and Italy, the major food deficit countries, willingly accepted and also found it easy to purchase our exportable surplus of food. In brief, we must explain why Europe is at present bending every effort possible to produce food at home, regardless of cost, instead of buying it from us. Our change from a debtor to a creditor country and our high tariff policy, in a large measure, tells us why Europe has found it increasingly hard to earn enough dollars to buy from us.

United States Becomes Leading Creditor Nation

The World War and subsequent events changed the United States from the world's greatest debtor to that of leading creditor. Our country is today a mature creditor country. This international financial position is for us a new experience. As a nation, we are still debtor-minded. We continue to think and act like debtors. Our tariff policy has been, and is, the exact opposite to that suitable to a creditor country. We have thus far refused to adjust our tariff policy to this changed financial situation.

As already indicated, before 1914 the United States was a debtor country. We had imported much capital which we had borrowed largely from European citizens. Many of our railroads and mining establishments were built largely with for-
eign capital. If one subtracts the investments of Americans in foreign securities from the investments of foreigners in United States' securities, the accounts, in 1914, stood about 3 billion dollars in favor of foreigners.

This net debt of the United States gave Europe an annual income of around 200 million dollars. Inasmuch as our exports exceeded our imports by about a half billion dollars yearly, outward interest payments provided foreigners with a large part of the dollars with which to pay for our favorable balance of trade. In spite of the fact that we restricted imports before the war, outward interest payments were an important factor making it possible for Europeans to buy more from us than we sold to them.

After the outbreak of the war our international financial position changed very rapidly. American securities held abroad, particularly those in the hands of the citizens of Great Britain, were sold in the United States. This process went on with such rapidity that by the time we entered the war in April, 1917, we had become a creditor nation. From 1917 to 1920, the United States government loaned to various European countries over 10 billion dollars. These funds were used largely to buy food and munitions from us. Europe needed our food chiefly because of the collapse of her own agricultural output at that time. But, it was largely by borrowing funds from us that European countries were able to buy the large amounts of American farm produce that they did. The export of capital, particularly the loans of our Government to foreign governments, largely provided the purchasing power with which Europe paid for the food. Accordingly, the agricultural expansion of that period, the prosperity of the war and the short post-war inflation are closely connected with our war loans during 1917 to 1920.

Trade After the War

In spite of our change from a debtor to a creditor country, the excess of commodity exports over imports was larger from 1920 to 1930 than during the years immediately preceding the

24 A part of the material of this section is based on Senate Document No. 70, World Trade Barriers in Relation to American Agriculture, prepared by the Bur. of Agr. Ec., U. S. Dept. of Agr., 1933. See also, Cirrs. 146 and 148 of the Iowa Agr. Exp. Sta., prepared last year by the writer.
war. This unbalanced situation was partly offset by large expenditures of American tourists abroad. But much more important were the funds made available through our foreign lending. In brief, Europe continued to borrow and we exported. They sent us long term bonds and we sent them bread and meat. Thus, until 1930, we maintained a large part of our export trade, in spite of the bald fact that foreigners were unable to earn enough dollars to pay for the commodities that they bought from us. Up until 1930, net capital investments abroad practically covered our trade balance.\(^{25}\)

**American Tariff Policy**

If foreign importers are to buy American produce they must find it possible to sell their goods and services to American citizens. If, because of trade barriers, they are unable to do so they have the alternative of borrowing dollars from us with which to buy American products and services. The alternative, however, is at best, temporary. But because foreigners were able to borrow, our foreign trade continued to go on, until 1930, in spite of the restrictions that our tariff policy placed upon imports, which in the final analysis are the payments which foreigners make for our exports.

Despite our new status as a creditor country, the American tariff was raised successively in 1921, 1922 and in 1930. Higher, ever higher, we built our tariff wall, thereby shutting out foreign goods; yet we were anxious to sell our farm surpluses abroad and at the same time collect the war debt. The American tariff clearly "limited the increase of American exports up to 1929, contributed to their decline thereafter, and is now one of the obstacles to their revival."\(^{26}\)

How much of the depression in agriculture is attributable to the tariff, of course, cannot be determined but the conjuncture of our creditor position and our high tariff policy has been one among several factors that has seriously impeded the export of farm commodities. This, in turn, certainly has contributed to the prolonged and chronic depression so evident in the export group of farm commodities ever since 1920.

\(^{25}\) Schultz, Theodore W. Iowa Agr. Exp. Sta., Cir. 146 (cited earlier), table 2, page 147, gives the balance of international payments of the United States for calendar years 1922 to 1931.

\(^{26}\) Senate Document No. 70. Cited earlier. p. 28.
The American tariff stands as an important barrier to foreign buying. It curtails foreign purchasing power for American farm products and, therefore, seriously impedes our exports of agricultural commodities.

**World Trade Barriers Abroad**

The geographical distribution of crops and livestock, in all probability, would be materially different today were it not for trade barriers. The recovery and expansion of European agricultural production, already discussed, was brought about partly by import restrictions. In considering the situation with respect to European trade barriers, it will be helpful to divide the post-war period into three major phases.\(^{27}\)

**Trade Restrictions Prevalent, 1918 to 1925**

From 1918 to 1925, severe trade restrictions and extremely high tariffs prevailed. It is not easy, however, to classify the reasons back of the determined actions of European governments to restrict trade. Among others, the following factors played an important part:

1. The World War had aroused an intense spirit of political and economic nationalism.
2. The new states that were created by the Versailles Treaty aspired to national self-sufficiency. Many of the boundaries of these newly created countries cut right across previously existing economic areas.
3. Trade restrictions were frequently employed to maintain and obtain favorable balances of trade. The objective was to stabilize the foreign exchange value of their currency.
4. The acute instability of certain national currencies led to severe trade restrictions.
5. The desire to protect old industries or to shelter new ones that had started during the war was a further motive for trade barriers. Agrarian unrest and the fear of social revolution caused some countries to protect and placate their farmers in order to insure greater social stability.

\(^{27}\) Based largely upon chapters 2 and 3 of Senate Document No. 70. Cited earlier. Also see Ezekiel and Bean. Cited earlier. pp. 13-19.
6. Tariffs were enacted to produce revenues, the need for which had been greatly increased by the war.

7. Some tariffs were raised for the expressed purpose of using them in tariff bargaining with other countries.

In general, industrial products suffered much more from the early post-war wave of trade restrictions than did agricultural products. The need for food for several years after the close of hostility of a number of the former belligerent countries was so great that they were compelled to allow imports to enter without restriction.

Trend Toward Moderation, 1925 to 1929

From 1925 to 1929 there was a definite trend toward a moderation of tariffs. A certain amount of stability was in evidence. The wave of tariff increases of the preceding period flattened out. It is true that trade barriers continued high, but more stable conditions of trade were achieved and, in some cases, tariffs were actually reduced.

During this period there was a tendency to eliminate direct restrictions. Germany, for example, late in 1925, after it had succeeded in stabilizing its currency abolished its import and export licensing. Some of the principal factors that were responsible for the moderation of trade barriers from 1925 to 1929 were:

(1) After 1924 Europe achieved considerably more financial and economic stability.

(2) Many commercial agreements were negotiated which provided against further tariff increases.

(3) The World Economic Conference held, late in the spring of 1927, prepared the way for checking further tariff increases.

(4) Wide use was made of bilateral tariff adjustments and there was a much wider recognition of the policy of equality of treatment.

(5) Considerable progress was also made through multilateral action.
Agricultural Protectionism Since 1929

Since 1929 foreign trade, especially in farm commodities, has all but come to a standstill because of the widespread and unprecedented increase in trade barriers. In practically every country, farmers dependent upon foreign markets have suffered much more than those who are producing commodities which are on an import basis.

The new upward trend in trade barriers received its chief impetus from the collapse of prices in 1929. Restrictions against agricultural products went to more extreme lengths than ever before in modern history. Europe protected its agriculture more and more, largely for the following reasons:

1. After the internal scarcity of food in post-war Europe was over, European farmers, who up to that time had received unequal tariff treatment, were accorded protection.

2. Agricultural protectionism in Europe had its start with the adoption of the German tariff law of 1925. Although licensing was discontinued, this law placed high duties on all of the important food imports.

3. War clouds again began to loom. European people, who suffered famine during the World War, are an important element in bringing about more protection for farmers in the hope that their respective countries may become self-sufficient in food.

4. Debtor countries felt themselves forced to tighten import restrictions in the hope of producing a more favorable and active trade balance so as to be able to meet heavy external financial commitments.

5. The return of Russia, as an exporter of foodstuffs, dramatically called attention to the ever mounting unsalable surpluses, particularly of cereals.

6. As the depression deepened it became increasingly difficult for governments, as well as for individuals, to make outward international payments. This in turn led to further restrictions upon imports, governments thereby hoping to increase the available foreign exchange necessary for outward financial transactions.

7. In the summer of 1931, there came the financial collapse of the Austrian Credit-Anstalt which quickly spread financial
disorder over all of Europe and from which there followed a network of arbitrary controls over foreign trade on a plane unparalleled during peace times.

**SHRINK AGRICULTURE OR SHIFT TARIFF PROTECTED INDUSTRIES**

Our foreign trade is at present badly disrupted. A tariff crisis paralyzes international trade. Domestic farm prices show the consequences. At the same time our debtors abroad, both public and private, are forced to default. The loss of foreign markets, moreover, has destroyed the fundamental balance between agriculture and industry in our national economic life.

There are, however, several correctives at work mending the fabric of foreign trade. But it is important to observe that the burden of these correctives falls with ruthless severity upon the American farmer. In substance, the adjustments now taking place in foreign trade are simply reducing the exports of commodities from the United States enough to balance our international incoming and outgoing payments to fit our creditor position.

While it may be true that there is comparatively little that the United States can do to improve the European situation, with reference to trade barriers, we can at least set our own house in order. We can relieve the undue economic pressure upon agriculture, to a considerable extent, by reversing our tariff policy. It seems well to repeat what we said in this connection a year ago: The alternative of shrinking agriculture is to increase imports. "To bring this about involves a gradual, yet definite, scaling down of our tariff wall. A downward adjustment of tariffs would tend to throw some of the burden of reestablishing foreign trade upon protected industries. Some business dislocations would result. Manufacturers at present supported by high and often prohibitive tariffs would have to meet foreign competition or shift into fields better suited to the economy of the United States.

"From a long trend national viewpoint this would be a desirable adjustment. Lowering tariffs to permit enough of an increase in imports of diversified manufacturers to make it possible for our farmers and export manufacturers to hold their
foreign markets would do two things: (1) maintain those indus-
tries that have in their production the greatest comparative 
advantage and (2) reduce those least effective in using Ameri-
can workers and resources. The ultimate result would be to 
raise the standard of living of the people of the United States.

"Prompt reduction of tariffs and the moderation of other 
trade barriers is highly desirable. This action is basic to the re-
establishment of our export trade, which, in turn, is basic to 
the restoration of the fundamental balance in our national eco-
nomic life. . . .

"But desirable as it may be to lower tariffs it should be real-
ized that this cannot be done in 1 or 2 years. Even under the 
most favorable circumstances it will probably take from 5 to 
10 years to effect a substantial reduction of prevailing domestic 
and foreign trade barriers. Then, too, serious dislocations 
would result if all tariffs were suddenly removed or even sharply 
reduced. There are many reasons why the process should 
be carried out gradually, the chief one being that it would give 
the tariff-supported industries an opportunity to shift to more 
productive enterprises. Meanwhile, what will happen to the 
American producer who has lost his foreign market? Until our 
foreign trade is reestablished, that is, until imports are in-
creased, exports must be reduced. Therefore, temporarily at 
least, some plan to facilitate the orderly retreat of our cotton, 
wheat, hog and tobacco producers is not only desirable but in 
all probability essential. While our national trade policies are 
being adjusted to fit our creditor position, sight should not be 
lost of the fact that the American farmer is carrying most of 
the burden of the adjustments now taking place; hence, he is 
entitled to first consideration in any relief program." 

The First Phase to Recovery

The Agricultural Adjustment Act created the governmental 
machinery which facilitates the orderly retreat of the cotton, 
wheat, tobacco, rice and of the corn-hog farmers. Beef cattle 
and dairying have also been included recently. The national 
emergency in agriculture demanded immediate action to re-

lieve, particularly those farmers dependent upon foreign outlets. The reduction of production has been the first phase of the farm recovery program, and properly so. This part of the program is still in its early stages, the corn-hog reduction contracts are just being signed. It, undoubtedly, is more than a one-year job; for, it is apparent, that the abnormal stocks that have accumulated in the basic commodities will not, in most cases, be back to normal that soon. Except for cotton, improvement in business generally will not increase materially the level of consumption of the American people. Obviously, there is no conceivable way by which the supply and demand for our export farm commodities can be balanced within the United States. Consumer demand for food cannot be increased much. Nor can industrial uses for farm produce be expanded rapidly, and it is not possible to cut acreage enough. Our national farm plant is too large for our present population and in spite of any reasonable curtailment will continue to be too large unless we reestablish foreign trade.

The Next Phase in Farm Recovery

It is now necessary to develop a sound commercial policy aimed at the reduction of those barriers that stand in the way of the recovery of our foreign trade. It is, certainly, impossible to adjust farm production to a domestic basis. Consequently, since it is necessary for us to sell a substantial part of our basic farm commodities abroad, it is essential that foreigners be permitted to earn enough dollars to buy these commodities from us. In the long pull, unless we want to give them the dollars or add to our already large amount of bad debts abroad, there is only one way by which they can earn dollars. They must find it possible to sell to us those goods and services which they can produce better than we can.

The next phase of the farm recovery program involves two important steps. First, the federal government must work out ways and means of putting into operation the basic principles of a sound commercial policy. The heart of such a policy must be to reduce tariff protection now given to the relatively inefficient producers, who by that token are least suited to the economy of the United States. Carrying out such a policy...
would make it possible for the more efficient producers to reëstablish their export markets. Second, because of the long strides that Europe has made toward self-sufficiency in foods, and because of the improvements in agricultural production techniques in some of our competing countries, particularly in the countries growing wheat, it will be necessary to recognize that even though Europeans are able to earn dollars they will not take pre-war quantities of all of our farm produce. In other words, we must determine in which farm commodities we have the best likelihood of strong foreign markets and in which, the least. Cotton, for example, even today is not penalized by tariffs or quotas abroad. Given the possibility of earning dollars, Europeans will readily buy our cotton. In contrast, in wheat it is doubtful whether we ever again will sell any substantial volume abroad. Lard is the important export product originating in the Corn Belt. Where does lard stand in foreign trade? How strong is its competitive position? Given a sound foreign trade policy can we recover our European, Cuban and Mexican outlets? The competitive position of lard in both the domestic and foreign markets will be considered in a later bulletin of this series.

SUGGESTED READINGS


The Agricultural Emergency in Iowa. X. Shrink Agriculture or Shift Tariff Protected Industries. Iowa Agr. Exp. Sta., Cir. 148:32. 1933.