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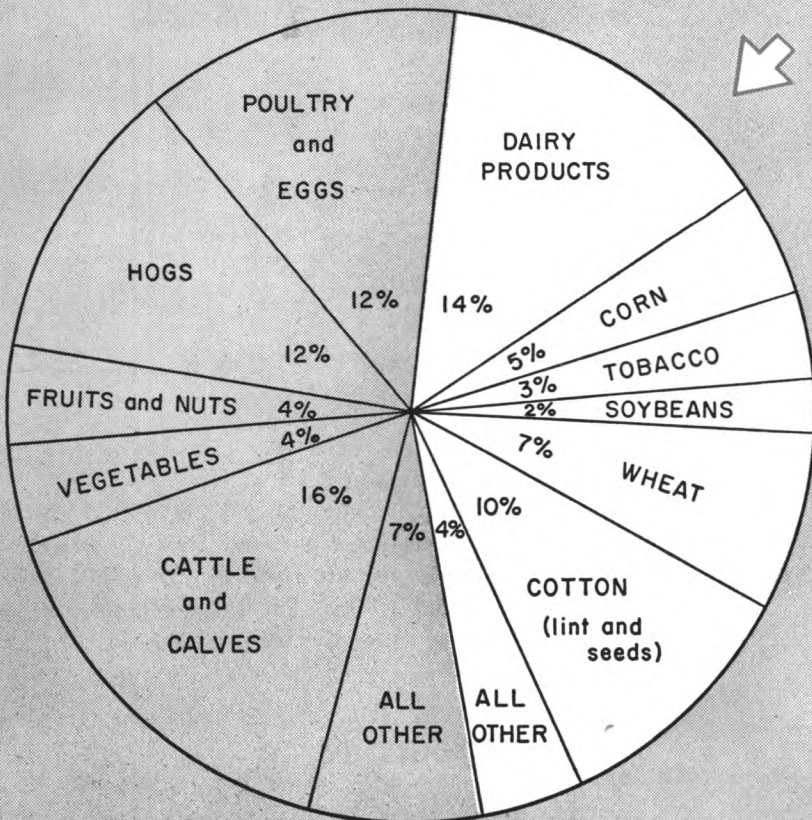
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TOTAL FARM INCOME

ITEMS SUBJECT TO PRICE SUPPORTS



A little less than half of the nation's farm income comes from products subject to the price-support program.

For the amount of money invested in price supports, and the forms which the investment takes, see chart on p. 5.

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The Investment in Farm Price Supports

MORE MONEY than ever before was put into supporting the prices of farm commodities during the 1954 fiscal year ended on June 30. These sums took the form of additional loans, as yet unredeemed, and an increase in the cost value of inventories owned by the Commodity Credit Corporation. A part of this investment will be lost, thus representing a cost to the taxpayers of the nation.

Realized losses, as measured by the difference between acquisition and sale prices of the supported commodities, also reached a new peak during the recently closed fiscal period.⁽¹⁾ A loss equivalent to 8 percent of the average investment was accumulated during the year. The loss was equivalent to well over one-third the size of all prior losses accumulated since the program's inception twenty-one years ago. Furthermore, the year-end inventory was still weighted with some of last year's big money losers.

The amounts of money involved in price support operations, and their distribution according to the crops covered, are matters of record, although the intricacy of the operation has tended to preclude a widespread understanding of the magnitudes involved. As an aid to such understanding, the following factual analysis is presented. It is based, for the most part, upon a rearrangement and simplification of the accounting data published in the Commodity Credit Corporation Report of Financial Condition and Operations as of June 30, 1954.

(1) Realized losses are charged against the year in which the sale takes place even though acquisition was made in earlier years.

Supported Products and Farm Income

In all, 46 percent of the nation's farm income originates from produce subject to the price support program, although the actual proportion of these commodities which becomes part of the price support investment varies sharply as among the commodities and from year to year. The remainder, or slightly over one-half, are unsupported. (See cover chart.)

Dairy products and cotton products are the only price supported groups which contribute more than 10 percent of the nation's cash farm income, according to the 1953 pattern of cash receipts. The former, representing a perishable commodity, also accounted for the greatest CCC loss; the latter, being more adaptable to storage, represented a very small loss but a rather substantial slice of the accumulated investment.

Wheat and corn bring in about 12 percent of the cash income but were credited with 36 percent of the CCC losses during fiscal 1954 and represented 55 percent of the investment.

A remaining 28 percent of the price support losses came from a wide variety of farm products which account in total for about 10 percent of the nation's farm income.

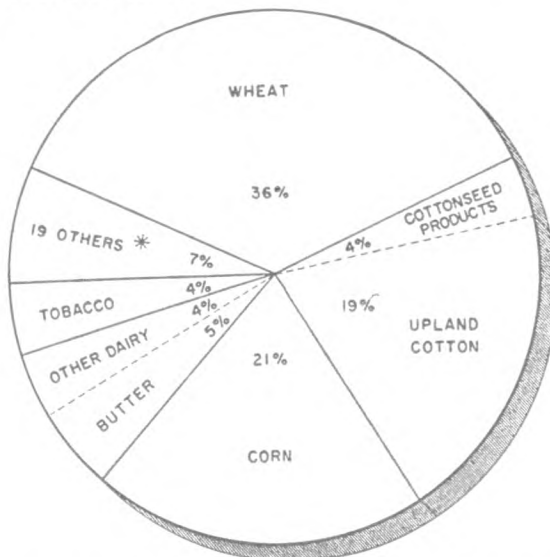
In addition to the conventional price support program here under discussion, limited aid is also given to a wide variety of the "unsupported" items through purchases for the school lunch program, charitable institutions and other eligible groups. Aid of this nature, which applies to many fruits and vegetables and occasionally some meats as well as other

products, differs from the regular price support program in that the applicable laws do not specify any particular items which must be purchased nor do they specify how much is to be paid for any commodity. Such purchases are generally shipped promptly to points of consumption with no build-up of stocks. Financing in this case is also different from the conventional price support program in that the funds come largely from a continuing appropriation equal to 30 percent of the import duties imposed on all commodities under the customs laws.

The Commodity "Portfolio"

Three of thirty commodities (wheat, corn and upland cotton) represented the bulk of the price support investment on the June 30 close of the 1954 fiscal year. (See accompanying chart.) The above three, together with dairy products, tobacco and cottonseed products, accounted for all but 7 percent of the investment total.

Three-fourths of the \$6,005 million price-support investment was in wheat, cotton and corn at the end of fiscal '54.



* "Others" include: wool; flaxseed and linseed oil; grain sorghum; barley; hay and cover crop seeds; oats; rosin; American-Egyptian cotton; dry edible beans; tung oil; rice; peanuts; rye; turpentine; olive oil; soybeans; honey.

Source of data: Commodity Credit Corporation.

As might be expected, a close relationship prevails between the items most prominent in this investment "portfolio" and those widely publicized as being in surplus of market needs. The year-end investment alone, however, does not fully account for the extent of price support operations through the year. This is particularly true of the more perishable products acquired and sold *within* the year to prevent spoilage.

Of the items in the CCC investment, wheat alone accounted for \$360 of every \$1,000 on June 30. An estimated 48 percent of the 1953-54 wheat crop was placed under price support. Holdings on June 30 (before the 1954 crop was harvested) were equivalent to a full year's domestic and export use.

Tonnages of corn equivalent to about 3 months' domestic and foreign use and of upland cotton equivalent to over 6 months' use (for all types of cotton) tallied an additional \$400 of every \$1,000 invested in support commodities.

Dairy products, tobacco, and cottonseed products contributed \$170 per \$1,000 of the remainder, with the balance distributed over a wide variety of supported items.

Price Support Losses

Profits on seven price-supported products totaling \$0.7 million proved of little value as an offset against losses totaling \$420.2 million on 26 items during fiscal 1954. Rice made the only substantial contribution to profits; dairy products, corn, wheat, and linseed oil were the biggest money losers, accounting for roughly 80 percent of the total.

Both dairy products and the seed products of flax are relatively small in the investment total when compared to their major contribution to net realized loss, thus indicating a rather costly liquidation process over the course of the year.

Wheat, being more adaptable to long storage, contributed less than one-fifth to the losses, even though it made up over one-third of the investment. Corn, which also possesses characteristics for long storage, was subject to heavy losses, in large part due to liquida-

Losses realized from support operations amounted to a record total of \$419 million during fiscal '54; dairy products, corn and wheat accounted for the largest shares of losses.



* "Others" include: grain sorghum; dry edible beans; oats; barley; upland cotton; tobacco; soybeans; wool; rye; olive oil; potatoes; tung oil.

Source of data: Commodity Credit Corporation.

tion of stocks acquired as long ago as 1948-49.

An ominous feature of the price-support status is that the few commodity groups which made up two-thirds of the record losses of the past fiscal year, still accounted for nearly two-thirds of the record high investment for the end of the fiscal period.

The benefits to agriculture in total as an offset to these losses are not entirely clear. Such analysis is made particularly complex by the interrelationships between the "haves" and the "have-nots" in reference to commodities which are supported. Some commodity groups, in specific areas at least, such as wheat farmers in the West, have undoubtedly profited for the year in question. Dairymen, particularly producers of milk for butter, have fared much better in respect to price than they would have without supports; in some fluid milk markets, price benefits have been largely nullified by the higher prices which must be paid for price-supported feed. Many specialized producers of poultry and

eggs have been faced with absence of support for their product, and yet have had to pay a higher price for feed on a supported market.

Cattle feeders and hog producers in the Corn Belt are permitted an alternative, insofar as they produce the supported feed grains as well as hogs and cattle which are unsupported.

Still other variations in impact prevail for other products which farmers sell.

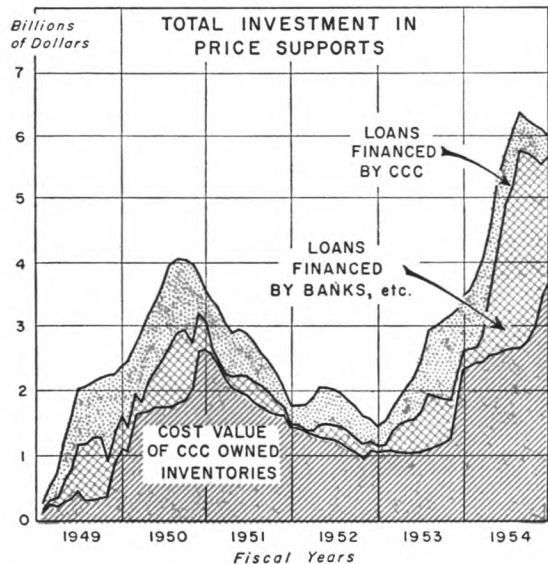
Nature of Investment

Traditional distribution patterns of the Commodity Credit Corporation investment were altered rather sharply during fiscal 1954, as shown by an accompanying chart. Expanding needs of the price support program at a time when the federal debt was virtually at the ceiling imposed by Congress resulted in the emergence of lending agencies as a more important element. (Guaranteed CCC loans held by private lenders are not considered a part of the Federal debt.)

Private lenders, primarily banks, enlarged

(Continued on Page 9)

An enlarged role of bank lending, as well as increased inventory investment by CCC, brought the total investment in price supports to a record high in fiscal '54.



Source of data: Commodity Credit Corporation.

District Trade Reflects the Industrial Pattern

DEPARTMENT STORE SALES in the Fourth Federal Reserve District have tended historically to fluctuate in patterns quite similar to those of the national total of department store sales. The fluctuations in District sales, however, have been wider, when expressed in percentage terms.⁽¹⁾ Patterns such as these have been in evidence in nearly all of the cycles of expansion and recession the country has experienced since the beginning of the series in 1919. The most recent swings have served to confirm the historical tendency. They have also reflected the interdependence which exists between the area's trade and its basic industries.

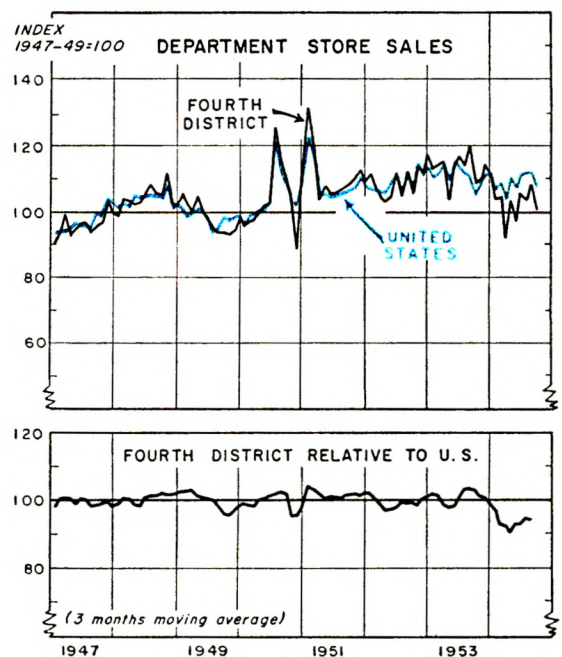
District and National Trade

As shown in the accompanying chart, two complete cycles are apparent in both the District's and the nation's sales record from 1947 to the present. One cycle is found in the expansion of 1947 and '48, followed by the contraction in 1949, and the other is the longer trade cycle which began in 1950, peaked in the summer of 1953 (after random interruptions in the expansion phase) and then passed into a declining phase ending approximately in the second quarter of this year. Generally, the behavior of sales within the Fourth District has closely approximated the national average, with some divergences readily apparent. (All charts in this article are based on seasonally adjusted data.)

In order to see the relationship more close-

ly, the index of department store sales for the Fourth District has been expressed as a percentage of the index of national sales. The resulting movement of the relatives has been smoothed by a three-months moving average and is shown at the bottom of the sales chart. Since the national index has been used as the base figure in computing the Fourth District's relative performance, the U. S. Index appears as a straight line or 100. The Fourth District index, therefore, is made to fluctuate around

Department store sales in the Fourth District have followed patterns similar to the national total, but fluctuations have been wider.



(1) Part of this effect may be attributed simply to the principle of the relative stability of large numbers. Offsetting swings in other Districts tend to retard the fluctuations of the national total.

the U. S. Index, according to the relative strength or weakness of the District's sales performance.

On such a relative basis, there was not much movement during 1947. However, in 1948 the Fourth District relative began to show a clearly defined upward trend, as District sales increased at a faster pace than U. S. sales; such performance was continued until well into 1949. By fall of that year, however, District trade had entered a definite slump and was at an index position well below the national average.

A second postwar upward trend in the District's sales relative to national sales began in the winter months of 1949 and '50 and continued, with one definite and explainable setback, until 1952. The subsiding of consumers' scare-buying in the fall of 1950, when coupled with the crippling snowstorm which blanketed most of this area in November, resulted in a sharp dip of the District's position below the U. S. index at the end of the year, as shown on the chart.

During considerable portions of 1952, the effects of the steel strike probably had a tendency to pull down the District index in relation to the national sales index. By mid-'53 however, the Fourth District relative had returned to a position well above the 100 line.

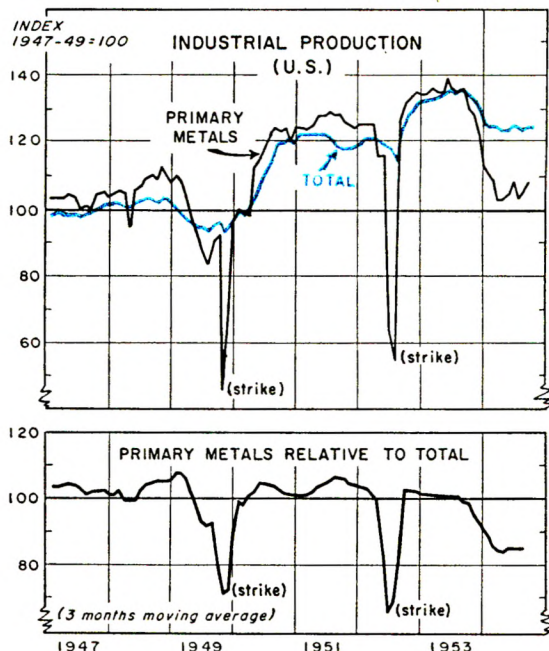
For almost a year following the summer of 1953, the District index shows an unusually marked downswing, although it was broadly in line with historical precedent in respect to its relation to nationwide sales.⁽²⁾ Also the District showing appears to have reflected the industrial pattern, as will be seen below.

Metals Production

A regional index of Fourth District total industrial production is not available. However, since the industrial composition of the area is well known, it is possible to use certain parts of the national production index to stand for the industrial emphasis of the area.

With 40 percent of the country's basic steel-producing facilities located in this Dis-

Cycles in the production of primary metals have been similar to swings in total industrial production, with larger fluctuations in metals than in the total.



trict, along with a concentration of metal manufacturing and fabricating industries, the area's industrial pattern is closely allied with the fortunes of steel and other metals. Although the effects of fluctuations in metals production may not be instantly felt throughout the area, it is probably correct to say that the area's general pace of business activity tends to react to metals production, after allowance for a time lag. Utilizing that fact for an indication of Fourth District industrial output can help toward an understanding of fluctuations of trade in the District.

The "primary metals" index, a component of the Federal Reserve Index of Industrial Production, is therefore used below to represent the type of industry which is emphasized in the District's pattern of production.⁽³⁾

(2) Part of the 1953-'54 downswing in the District is attributable to the effects of a prolonged labor dispute in Pittsburgh.

(3) Steel, with pig iron and ferrous metals forgings and castings, comprises about 75 percent of the total "primary metals" index, and production of the non-ferrous metals, such as copper, lead, zinc and aluminum, constitutes the remainder.

Primary metals and total industrial production of the United States are shown in an accompanying chart.

Both the metals index and the total index of industrial production have moved through two cycles of expansion and contraction in the postwar years. The metals series, however, has fluctuated more widely. The periods of soaring production are accentuated by the deep declines caused by the two steel strikes in 1949 and 1952. The 1953-54 decline in steel production is also evident in the chart.

In the bottom of the chart, the metals index is made to fluctuate around total production, according to its relative strength or weakness, by using the total production index as a base figure equal to 100. (The resulting relatives have been smoothed by a three-months moving average; the arrangement is the same as already shown in the comparison of Fourth District department store sales with national sales.)

It is apparent that metals production was pacing total industrial production during the greater part of the 1947-'48 expansion and again in the Korean-induced expansion period of 1950-'51. After the interruption occasioned by the steel strike of 1952, the prominence of metals in the total of industrial production was resumed for a brief period, but not so markedly as had been the previous case; thus, the line representing the index of primary metals production, relative to total industrial production, runs only a little above 100 in the early part of 1953. The sharp decline occurring from mid-1953 to the second quarter of this year confirms the fact that metals production fell not only in an absolute sense, but also in relation to total production.

District Trade and Metals Production

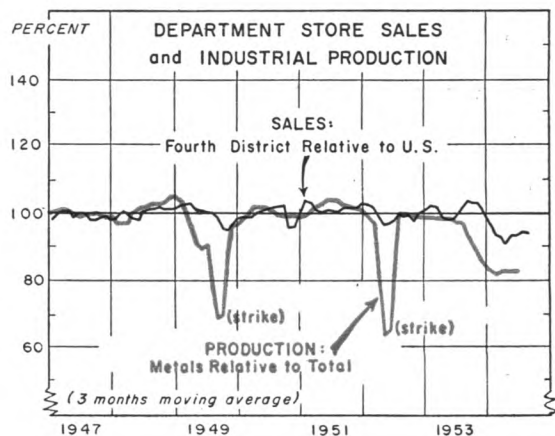
When metals production is considered in relation to total production, and when Fourth District department store sales are considered in relation to nationwide sales, there is a similarity of the emergent patterns. In each case, the named segment has shown greater volatility than the total, or what might be considered greater sensitivity to cyclical change.

The connection between the two sets of facts lies in the point that trade totals are clearly connected with payroll disbursements, and that industrial payrolls in the Fourth District necessarily reflect the concentration of heavy industry. In turn, the greater volatility of durable-goods industries, as compared with nondurable goods industries, is a basic fact well known to business observers and to students of the economic cycle.

In order to provide a visual demonstration of the rather broad relationship just mentioned, a final chart is provided. This chart merely puts together the bottom halves of the two preceding charts. Thus, the blue line shows the trend of metals production *relative* to total production, while the black line shows the trend of Fourth District department store sales relative to nationwide department store sales.

Several points need to be mentioned in interpreting this final chart. If a one-to-one correspondence between the two lines were to be demanded as confirmation of the underlying argument, then the chart must be considered as obviously failing to confirm the assumed connection. However, economic relationships are rarely so simple.

After allowance for exceptional situations, there appears to be some general correspondence in movement between metals production (relative to total production) and Fourth District department store sales (relative to U. S. sales).



The exceptional situations produced by the steel strikes of 1949 and 1952 may be evaluated and then set aside. The blue line drops far below the black line in each case; but the black line is also below 100 at these particular times. This means that the strikes probably *did* have a special impact on the volume of trade in the Fourth District, as might be expected by consideration of payrolls. It is entirely clear, however, that the retarding effects were not of an overwhelming character, at least so far as concerns the rather inclusive District totals. In fact, the relatively slight drop of the black line below the 100 position in each case might be considered an indication that the effects of the steel strikes on trade volume were less drastic than were widely supposed at the time.

The regional obstacles to trade occasioned by the blizzard of 1950 have already been mentioned; they are exhibited in the final

chart through a temporary divergence between the black and blue lines.

Setting aside, then, the special situations already mentioned, it seems a fair conclusion that there *is* a rather general correspondence between the two lines shown in the final chart,—a similarity which is more than accidental. Such a relationship shows most clearly in the general tendency of both lines to push well above 100 during the expansion phases of the postwar period, and the tendency of both lines to dip below the 100 position in times of readjustment,—especially so, during the recession of 1953-'54.

A tendency toward pickup since the second quarter of 1954 is also observable for both of the relative indexes shown in the final chart. The solidity of the recovery, however, has been a matter open to varying interpretations, upon the basis of data available up to press time.

FARM PRICE SUPPORTS

(Continued from Page 5)

their holdings from 7 percent to 33 percent of the total investment over the twelve-month period. The sale of Certificates of Interest on grains and cotton proved particularly effective in this respect, especially in view of their wide appeal to large city banks. Roughly three-fourths of the CCC loans held by lending agencies were in the form of Certificates of Interest, as of June 30, 1954, with cotton as the preponderant form of collateral.

Price support loans financed directly by the CCC actually declined during the year, both in dollar volume and in their relative importance in the total. Inventories of commodities acquired by the CCC advanced sharply over the year but likewise failed to keep pace with the rise in total investment.

Despite the relative gains made by lending

institutions, the CCC still finds it necessary to borrow heavily in order to play its part in financing price-support operations. At the June 30 close of the 1954 fiscal year, such borrowings totaled roundly \$4.2 billion (series seven—1955 notes from the U. S. Treasury) compared with \$2.0 billion in obligations to purchase loans financed by lending agencies. The \$6.2 billion total, of which \$6.0 billion was invested in commodities, was \$2.3 billion short of the \$8.5 billion statutory borrowing authority allowable at that time. (In anticipation of still greater pressure from farm surpluses, this authorization was increased to \$10 billion on August 31, 1954.)

Assets of the CCC charged against borrowing authority for purposes other than for price-supported commodities were represented

largely by the investment in structures and equipment for storage of commodities.

A New Farm Law

One consequence of the record loss and investment during fiscal 1954 was an official new look at the price support legislation in effect. Many of the commodities growing in surplus and punctuated in "red ink" were still being supported under emergency legislation enacted to stimulate production during World War II. In August, Congress passed the "Agricultural Act of 1954" designed to modify a profit incentive which appears to have been a factor in production in excess of use. Specifically affected by the new law were most of the commodities designed as basic, i.e., cotton, wheat, rice, corn and peanuts. Tobacco, also a basic commodity, was excepted.

A principal feature of the "Agricultural Act of 1954" was the introduction of flexibility into the price level at which the above-mentioned farm products would be supported, so that guaranteed prices would drop as supplies increased and so that prices would increase when supplies were low. This feature did not apply to 1954 crops. Its first application will be for 1955 basic crops, with the range of flexibility specified as 82½ percent to 90 percent of parity compared with a flat 90 percent for many prior years. The conversion to the lower support levels for wheat and cotton will be softened, however, by a provision to "set aside" substantial quantities of produce, thus excluding them from the supply used in calculating the guaranteed

price. After 1955, the range of flexibility will widen to a 75 percent to 90 percent range as originally proposed in the "Agricultural Acts of 1948 and 1949."

In addition to changes enacted in the new general farm law, the Secretary of Agriculture has also exercised a prerogative of adjusting support levels downward on certain *non-basic* commodities. Dairy products are perhaps the most publicized example. With supplies of butter and other dairy products pouring into CCC inventories at unprecedented rates, and with heavy losses imminent, support levels were lowered from 90 percent to 75 percent of parity on April 1.

Support prices on flaxseed have been reduced sharply in view of the heavy supply situation and the disproportionate contribution to losses.

Acreage allotments and marketing quotas have likewise been brought into play to cut production and thus alter the investment and loss pattern of the Commodity Credit Corporation.

While there is evidence that the *rate* of growth shown by activity of this price supporting agency has been slowed down, it is still too soon to foretell the effectiveness of the present farm program. Some observers expect that the total investment will push much closer to the new \$10 billion statutory limit during fiscal 1955, as excess production of 1954 produce is piled upon the carryover already on hand on June 30. On the other hand, development of a successful surplus program could conceivably result in keeping in check the growth of such financial obligations.



Science and Farm Surpluses

By DR. K. STARR CHESTER, *Battelle Memorial Institute*

SCIENCE can aid in solving the farm surplus problem if opportunities are developed for greater industrial use of agricultural raw materials. Such opportunities take three principal forms: (1) developing new industrial crops for some of the lands now devoted to surplus crop production, (2) finding new industrial uses for surplus crops, and (3) broadening industrial markets for farm wastes so that the profits from these would enable the farmer to accept lower prices for surplus commodities.

Only study and experience can determine the relative extent to which each of these paths of development should be carried. But, as their relative importance is determined, the most productive use of our farm lands could be achieved, and, in turn, the price of agricultural commodities would tend to settle at their natural market levels.

The opportunities for developing new industrial crops for surplus acres are staggering. There are, in the world, some 300,000 different species of plants. Yet man has found use for only two percent of these. Among these many thousands of wild plants, there surely must be others, like the soybean, that could be usefully grown for industrial raw materials on the 30 million acres now devoted to surplus production. Soybeans are a tremendously successful industrial crop which, in a generation, has risen to occupy 14 million acres of former wheat and corn land.

Surplus acres could be used to develop other valuable additions to our economy such as new and better pharmaceuticals, fibers, vegetable oils, and industrial proteins. Important progress is being made toward the development of industrial uses for sesame, bamboo, safflower, and ramie. The surface of opportunities, however, has only been scratched.

Enormous tonnages of crop residues such as stalks, cobs, hulls, straw, and pits, remain on the farm as almost useless wastes. Science is showing us how many of these can be converted into useful industrial products. There is, for example, furfural, Cinderella of industrial chemistry, a basic industrial raw material that enters into the manufacture of hundreds of end products ranging from nylon stockings to rocket fuel. Furfural is commonly made from corncobs or oat hulls. If farmers could get more income from such by-products, it would be possible for them to accept less for their principal products and still maintain, or increase, their total income.

The bottleneck to greater industrial use of farm wastes or residues is the cost of transporting bulky,

low-value raw materials. One interesting possibility for overcoming this bottleneck is to perform a first step in manufacture based on the farm residues near the farm. This might be accomplished using portable semiprocessing equipment such as could be mounted on railroad cars or truck trailers and moved from place to place wherever the farm residues accumulate. Such local semiprocessing could reduce the bulk and increase the value of the residues to the point where it would be economical to transport them to a central plant for completing the manufacturing process.

Science has already found many industrial uses for the farm commodities that are in surplus supply. Industrial chemicals can be made from starches and sugars, textiles from corn protein, antibiotics from corn steep liquor, paper coatings from milk protein, and numerous others. Many more industrial uses will be found. However, there are two bottlenecks, technological and economic. On the technical side, we need much more information on the chemical and physical properties of our farm products. Of all plants grown by man, only a few such as wheat, corn, and soybeans, have been thoroughly characterized, chemically and physically.

The other bottleneck is economic. Many industrial processes that formerly were based on agricultural raw materials have now shifted to synthetic or substitute raw materials. The chief reason is that the substitute materials are cheaper. The agricultural raw materials have priced themselves out of the industrial market. For example, butanol and acetone, basic industrial chemicals, were formerly made from corn. Today the plants that made these chemicals from corn are idle, and the chemicals are being manufactured from petroleum or natural gas. Glycerol, another basic industrial chemical, was formerly made from tallow, and to some extent from cottonseed oil and soybean oil. Now synthetic glycerol is taking over the market.

This trend away from industrial use of agricultural raw materials might be reversed if it could be made more attractive for industry to use the surplus commodities. There is well-established precedent in the United States for offering industry incentives when the desired industrial operations are in the public interest, in the nature of an emergency, or represent economic risks. Industrial use of the surpluses fits all three of these situations.

Science could perform a most valuable service to our economy if a thorough analysis could be made of the possibilities and problems involved in greater industrial use of agricultural raw materials. Efforts are already under way to have this analysis made.

Editor's Note—While the views expressed on this page are not necessarily those of this bank, the *Monthly Business Review* is pleased to make this space available for the discussion of significant developments in industrial research.

