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Purchasing Power of Missouri Farm Products

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Purchasing Power of Missouri Farm Products

R. L. KOHLS

INTRODUCTION

The individual farmer is continually attempting to determine which enterprise or enterprises will make possible the greatest total profits. He also must make decisions as to whether an individual enterprise should be contracted or expanded. In order to make these decisions wisely he needs to know whether the prices of the commodity or commodities are tending to increase or decrease in relation to the prices of other farm products. He also needs to know whether or not the prices of the commodities have cyclic characteristics, and if they do, he is interested in the current position of these cycles.

It is very difficult to determine price trends from studying the market prices as they are given. The prices of all farm products tend to move up and down with the level of all prices. During periods such as wars when the general level of all prices is high, prices of farm products are also high. During periods such as the depression of the thirties when the general level of prices is low, prices of farm products are also low. Though there is the tendency of farm prices to move up and down together, the degree of price change of various commodities is not the same. Are egg prices in relation to other farm product prices generally weaker or stronger now than they were fifteen or twenty years ago? Have beef cattle prices strengthened in relation to other farm commodities during this period? Do prices of beef cattle move up and down relative to other prices with any regularity? These questions are difficult to answer by the study of actual dollar and cents prices as quoted at the market place.

Purpose and Scope of the Study.—The purpose of this study was to give Missouri producers a clearer picture of the relative price changes of important Missouri commodities. In order to study the underlying trends in prices, the concept of "purchasing power" is frequently used. The purchasing power approach attempts to remove the influence of the changing price level and to determine a "corrected price" of the commodity. The corrected price is then sometimes

converted to an index basis to facilitate comparisons. In other words, the index of purchasing power of a commodity shows what the relative trends of prices of commodities would have been if the general price level had not moved up and down.

The purchasing power of Missouri farm product prices was analyzed in order to study: (1) the long-time price trends of individual commodities, (2) the cyclic or erratic nature of the purchasing power of these commodities, and (3) the reaction of particular commodity prices to violent changes of the general price structure.

The purchasing power of 36 Missouri farm products was calculated. These include the following: 11 livestock and livestock products; 3 poultry and poultry products; 10 grains and small seeds; cotton; 5 fruits, and 5 truck crops. The analysis covers the period 1910 through 1947, except for those commodities for which data were not available for the entire period. In some instances where one commodity is closely related to another, a ratio has been computed for the two commodities. In the text of the study the phrase relative price is used in the same sense as purchasing power.

The three most common measures of the purchasing power of farm products are in terms of: (1) prices paid by U. S. farmers, (2) wholesale prices of all commodities, and (3) prices received by U. S. farmers. Purchasing power calculated by the first method measures whether farm prices are high or low relative to the prices paid by farmers. Purchasing power calculated by the second method measures whether farm prices are high or low relative to the wholesale prices of all commodities. Purchasing power calculated by the third method measures whether farm prices of a commodity are high or low relative to the level of prices of all farm products. In this study the latter method was used. The purchasing power index thus constructed assists in appraising changes in price position of the different farm products relative to each other.

There are points favoring and against each method. Purchasing power in terms of prices received by the farmer was chosen because: (1) It more nearly reflects the influence of price level changes on the prices of agricultural products. This is especially true for periods of rapid price change. (2) It more directly reflects the relative price position of one agricultural commodity as compared to others. This method was thus chosen even though influences of good and poor crop years may somewhat disturb prices received by farmers as a measure of the effect of price level changes.

A clearer understanding of the significance of purchasing power trends is possible by also studying trends in production. Changes in

production of a given commodity when studied in the light of purchasing power changes may give a general indication of the relative profitability of the commodity. For that reason average production of Missouri livestock and crops are given in the Appendix (pages 28-33).

In studying the purchasing power data and charts, the reader may raise the question as to whether Missouri prices for a given commodity have maintained or lost position relative to prices received by U. S. farmers. Data on this are also included in the Appendix.

Procedure.—In order to find the index of purchasing power of an individual commodity the following procedure was used:

Step 1. Missouri farm price of the commodity divided by the index of prices received by U. S. Farmers (1910-14 = 100) = the "corrected" or purchasing power price of the commodity.

Step 2. "Corrected" price of the commodity, for each year divided by the 1910-39 average "corrected" price of that commodity $\times 100$ = purchasing power index of the commodity (1910-39 = 100).

For example; the monthly price received for hogs by Missouri farmers during 1930 was divided by the monthly index of prices received by U. S. farmers. The results, when the months were averaged, gave a corrected price for 1930 of \$7.01. The 1910-39 average of the corrected prices of hogs was \$6.84. Then, \$7.01 divided by \$6.84 $\times 100$ = 103; this gave the index of purchasing power of hogs for 1930. In brief, this means that hog prices in 1930 were 3% above their 1910-39 relationship to all other farm prices.

The majority of indexes of purchasing power are computed using a five-year base period. The most common base periods are 1910-14 and 1935-39. The 30-year base, 1910-39 was chosen for this study because a shorter period was not long enough to avoid distorted and unrealistic relationships between commodities. Price cycles for cattle generally extend over 14 to 16 years and for sheep around 10 years. The use of a short base period introduces the possibility of distorted price relationships. Thirty years seemed ample to average out both erratic and cyclic fluctuations of commodity prices.

The Use and Limitations of Purchasing Power.—The index of purchasing power as calculated in this study can be used to determine whether the trend in the price of a farm commodity is rising or declining relative to its long-time relationship to all other farm commodities. It can be used, also, to determine which commodity prices were strong or weak at any particular time relative to their long-time relationship to all other prices. Purchasing power used alone, however, is not an

indicator of the profitableness of a particular enterprise. Changes in the cost of production must be considered. The long-time tendency is for price to equal the cost of production of a commodity. However, the trend of the purchasing power by itself does not tell whether the trend is due to changing costs of production or to a changing consumer demand for the commodity. For example, a downward trend in purchasing power might mean that cost of production of the commodity was decreasing, or that demand for the commodity was decreasing, or that both might be occurring simultaneously. The use of purchasing power shows the trend of price—it does not tell why a given trend occurred.

If the purchasing power of a commodity is studied along with production trends, some general broad conclusions such as the following are usually valid:

1. If the purchasing power trend of a commodity is downward, but its production remains unchanged or increases, probably the profit margins of the enterprise are still relatively favorable in comparison to other similar enterprises or the cost of production is decreasing more rapidly than the price of the commodity.
2. If the trend of purchasing power is downward and production trends are downward, costs of production are not decreasing as rapidly as price and profit margins are relatively unfavorable.
3. If the trend of purchasing power of the commodity is upward but its production remains unchanged probably the cost of production is increasing and profit margins remain relatively unchanged.
4. If the trend of purchasing power of the commodity is upward but its production is decreasing probably the cost of production of the commodity is increasing more rapidly than the price received and profit margins are relatively unfavorable.

One other caution is needed as to the use of purchasing power. An extremely high (or low) purchasing power for a given year does not mean the total income from that commodity was necessarily high or low. Income from a commodity is the result of the volume of production and the price. Many times, especially with crops, extreme variations in purchasing power are the result of price response to a bumper crop or crop failure.

PURCHASING POWER OF MISSOURI LIVESTOCK

The purchasing power of livestock does not fluctuate as violently from year to year as does the purchasing power of crops. Because of the reaction of producers to high or low purchasing power, production of various livestock tends to move in more or less regular cycles. Associated with this cyclic nature of production are cycles in purchasing power. The relationship between numbers and purchasing power is inverse—that is, high purchasing power is associated with relatively low numbers and low purchasing power with high numbers. The relationship between numbers and purchasing power cycles is shown in many of the graphs. The differences in length of the purchasing power cycles are largely due to the differences in the length of time necessary to expand or contract the production of the kind of livestock in question. The irregularities in the length of a cycle are largely due to some abnormal and unpredictable development such as a severe drouth, extremely favorable weather, or sharp drastic changes in the general price level.

Beef Cattle.—The trend of the purchasing power of beef cattle (Figure 1) has been upward since 1920. During the decade of the 1920s, the purchasing power averaged 12% below the 1910-39 average; during the 1930s, 15% above; and during the period 1940-47 the purchasing power averaged 19% above the long-time average. The purchasing power of beef cattle reached peaks in 1914-15, 1929 and 1939; lows were reached in 1920, 1934, and 1944. Other studies covering longer periods have found the cycle in purchasing power to average 14 to 16 years in length.

The trend in Missouri beef cattle numbers was downward until 1939 but sharply upward from 1939 to 1948. It is not certain whether this trend has been permanently reversed during the World War II period. The average of slightly more than 2 million head for the period 1940-48 was higher than for any similar period since 1910.

Veal Calves.—The trend of purchasing power of veal calves (Figure 1) was upward and has followed that of beef cattle closely. For the period 1920-29, the purchasing power of veal calves was 8% below the 1910-39 average; for the period 1930-39 it averaged 9% above, and during 1940-47 it averaged 11% above. The purchasing power of veal calves moved in cycles very similar to that of beef cattle. With few exceptions, beef cattle prices and veal calf prices have moved up and down together.

Milk Cows.—The trend of purchasing power of milk cows (Figure 1) has been slightly downward even though for the period 1940-47, purchasing power averaged about 14% above the long-time average.

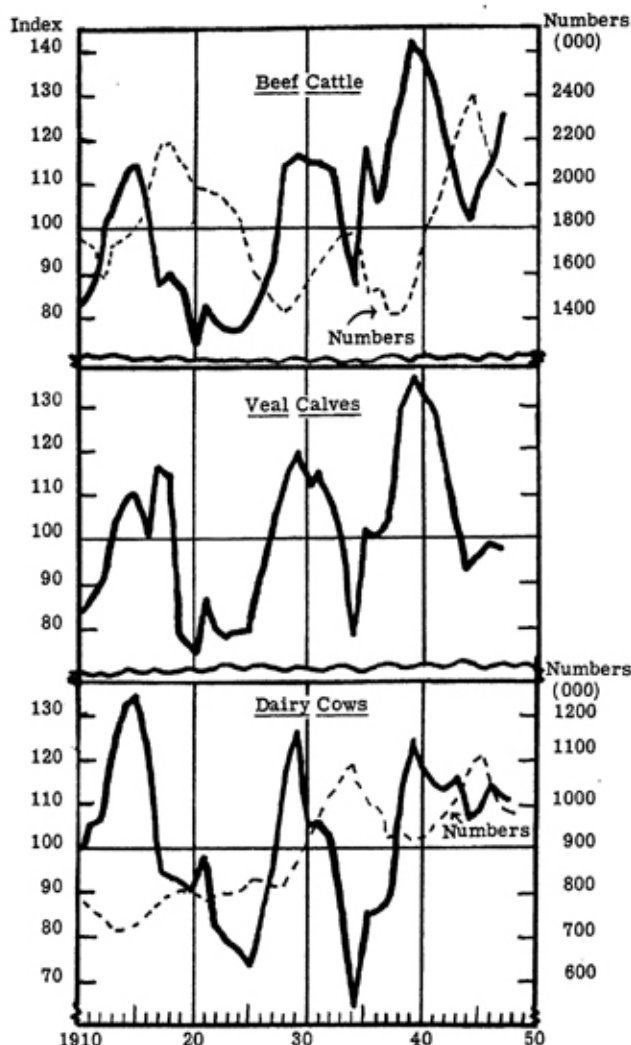


Fig. 1. - Indexes of Purchasing Power of Cattle and Missouri Cattle Numbers (Index 1910 - 39 = 100)

Dairy cattle prices and the price of beef cattle have tended to move up and down together and the purchasing power cycle of milk cows was very similar to that of beef cattle and veal calves. Up until 1939, the cyclic fluctuations in milk cow prices were more pronounced than those of beef cattle. Since 1940 this has not been so. This may mean that prices of milk cows are becoming relatively more responsive to the relative prices of dairy products (see Dairy Products) and relatively less responsive to beef cattle prices than in the past. The trend of Missouri milk cow numbers has been rather sharply upward since 1910. During the period 1940-48 the average was slightly over one million head compared to an average of 762 thousand during 1910-19.

Hogs.—There has been no definite trend in the purchasing power of hogs (Figure 2) since 1910. For the 10-year period 1910-19 the

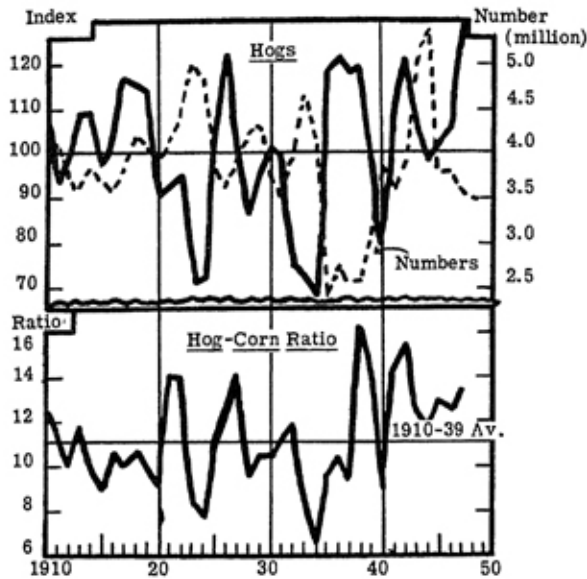


Fig. 2. - Index of Purchasing Power of Hogs, Hog Numbers and the Missouri Hog-Corn Ratio (Index 1910 - 39 = 100)

average index of purchasing power was 108, for 1920-29 it was 93; for 1930-39 it was 100; and for the 8-year period 1940-47 it was 106. The cyclic fluctuations in purchasing power of hogs were shorter, less regular and somewhat more violent than those of cattle. The complete cycle varied from 4 to 7 years in length, averaging about 5 years. The most common single cause of variation in length of cycle was a corn crop of abnormal size. There has been no definite long-time trend either upward or downward, in Missouri hog numbers, though numbers were reduced drastically during the mid-thirties largely because of the corn crop failures during that period. Hog numbers tended to fluctuate in rather irregular cycles opposite to the purchasing power cycle.

Probably of even more interest than the general purchasing power of hogs was the purchasing power of hogs in terms of corn—the hog-corn ratio. For the entire period, 1910 to 1947, there has been no definite upward or downward trend though the ratio has tended to increase since the record low ratio of 1934. The 1910-39 average ratio for Missouri was 11. The hog-corn ratio has varied cyclically with the peaks and lows corresponding rather closely with the peaks and lows of the general purchasing power of hogs.

Sheep and Lambs.—The trend of the purchasing power of lambs (Figure 3) has been upward since 1910. The cyclic fluctuations in lamb prices have been less severe than those of either cattle or hog prices. There has been two complete 10-year cycles and part of a third cycle in lamb prices since 1910. The tendency has been for the down-

ward phase of the cycle to occur quickly and for the upward phase to extend over several years.

The trend of the purchasing power of sheep has been sharply downward since 1910. For the period 1910-19, the purchasing power of sheep averaged 12% above the long-time average; for the period 1940-47 it averaged 19% below the long-time average. In 1947, the purchasing power of sheep was the lowest since 1910—only 65% of the long-time average. Sheep purchasing power has moved in cycles which correspond closely with the purchasing power cycles of lambs, but have fluctuated through wider limits. Though two complete 10-year cycles have occurred in the purchasing power of sheep and lambs since 1910, studies covering longer periods of time have found that

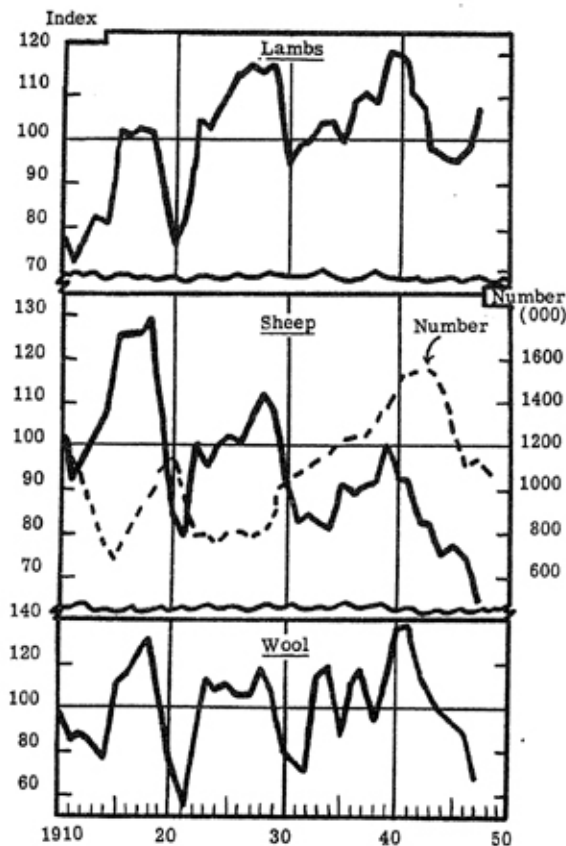


Fig. 3. - Indexes Purchasing Power of Lambs, Sheep and Wool and Missouri Sheep Numbers (Index 1910 - 39 = 100)

cycles vary in length from 7 to 11 years. Like lambs, the downward phase of the cycle occurred much more rapidly than the upward phase. Sheep numbers tended to move in cycles opposite to the purchasing power cycle. The general trend of Missouri sheep numbers has been gradually upward throughout this period—especially since 1928.

Wool.—There has been no upward or downward trend in the purchasing power of wool. Until 1930, the movements of purchasing power of wool corresponded with those of sheep. Since that time, the purchasing power of wool has changed more violently and has not followed that of sheep as closely as before. Since the mid-thirties, the government has attempted to support wool prices to a greater or lesser extent which probably has affected the relative purchasing power of wool somewhat.

Horses and Mules.—The trend in purchasing power of both horses and mules (Figure 4) has been downward. Since 1940 the downward trend has been accelerated. In 1947, the purchasing power of horses

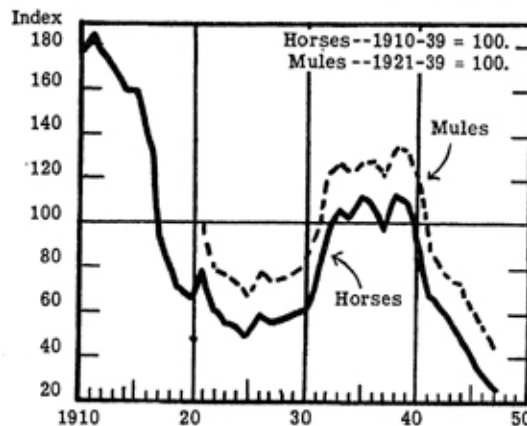
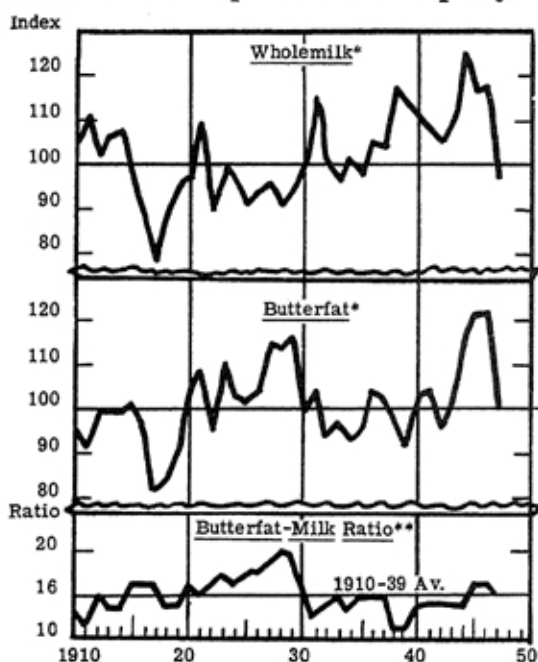


Fig. 4. - Indexes of Purchasing Power of Horses and Mules

was less than one-fifth of the long-time average; the purchasing power of mules was about one-third of the long-time average. This is an example of relative price being lowered by a continual decrease in demand as the nation's agriculture became more mechanized. Compared to other livestock, fluctuations in the purchasing power of horses and mules from year to year were minor. A cycle of horse and mule prices has been determined by studies covering longer periods of time to be about 25 years in length. The period here, however, covered is not long enough to verify the existence of the cycle. Generally speaking, the prices of work animals did not rise as rapidly as the prices of other farm products during periods of high and rising prices and their purchasing power declined. This was true for both war periods. In periods of low and declining prices such as during the 1930s, the prices of work stock did not fall as much and their purchasing power rose. Throughout the period Missouri numbers of both horses and mules have declined rapidly. On the average during 1910-19, there were 1,072,000 horses and 382,000 mules in Missouri. The yearly average for the period 1940-48 was 497,000 horses and 170,000 mules.

PURCHASING POWER OF MISSOURI DAIRY PRODUCTS

Wholesale Wholemilk.—The trend of the purchasing power of wholemilk (Figure 5) has been steadily upward since World War I. For the decade 1920-29 the purchasing power index averaged 96; for the decade 1930-39 the average was 106; and for the eight years 1940-47 it averaged 112. The fluctuations in the purchasing power of wholemilk from year to year were less severe than for many other products. The price of wholemilk is not as sensitive to price level change as many other agricultural products. This resulted in high milk prices relative to other agricultural prices during such periods as 1920-21, 1930-31 and 1938-39 when all prices declined abruptly, and relatively low milk prices during periods when all prices rose rapidly.



*Includes government subsidy Oct. 1943 through June 1946.

**Pounds of milk one pound of butterfat would buy

Fig. 5. - Indexes of Purchasing Power of Wholemilk and Butterfat, and Butterfat-Milk Ratio (1910-39 = 100)

Butterfat.—From 1910 until 1929 the trend of purchasing power of butterfat (Figure 5) was upward. After 1929 it declined abruptly and during the 1930s and early 1940s it showed no definite trend either upward or downward. From 1943 to 1946, it climbed to unprecedented heights; during 1947 an abrupt decline occurred. Year to year fluctuations in the purchasing power of butterfat were somewhat more severe than those of wholemilk. On the average during 1910-39, the price relationship was such that one pound of butterfat would exchange for 16 pounds of wholemilk (see butterfat-milk ratio). Wholemilk has become more valuable in relation to butterfat since 1929. Up until 1929 one pound of butterfat would exchange for an increasing number

of pounds of wholemilk. Since 1929, the number of pounds of wholemilk that one pound of butterfat would buy has averaged below the 1910-39 relationship.

Milk produced on Missouri farms has had an upward trend since 1924. Of this increasing production the amount sold as wholesale milk has increased rapidly while that sold as cream has decreased. During 1925-29, milk production averaged 2957 million pounds, during the 1940-44 period, 3754 million pounds. During the 1925-29 period, an average of 1375 million pounds were sold as cream, 338 million pounds as wholemilk. For the five-year period 1940-44, only 1319 million pounds on the average were sold as cream, while 1423 million pounds were sold as wholemilk.

PURCHASING POWER OF MISSOURI POULTRY AND POULTRY PRODUCTS

Eggs.—The trend of the purchasing power of Missouri eggs (Figure 6) has been steadily downward since 1920. Based on the 30-year average, the index of purchasing power during the twenties averaged 105, during the thirties it was 96, and for the five year period 1940-47 it was 89. This downward trend in the price of eggs relative to other farm products has been accompanied by a downward trend in egg production in Missouri from 1925 until the World War II period. During World War II egg production increased sharply. The purchasing power of eggs since 1920 has tended to move in fairly regular cycles of from 3 to 4 years from peak to peak.

Chickens.—The trend of the purchasing power of Missouri chickens (Figure 6) was upward until 1931, but since then has been downward. Relative chicken prices averaged 108% of the long-time average during the twenties, 107 during the thirties, and 92% during 1940-47. This decline in the purchasing power of chickens has been accompanied by a decline in the number of chickens produced in Missouri from 1925 until World War II. However, even though chicken production during 1940-44 averaged 35.1 millions this was still well below the 41.0 million average production during 1925-29. There was a tendency for the purchasing power of chickens to alternate one year up, one year down—but with very great irregularity. It is of interest to note that during times of a rapidly declining price level such as occurred during 1920-21, 1930-32, and 1937-38, the price of chickens did not decline as rapidly as all farm prices. This resulted in a high purchasing power for chickens during these periods. During periods of rapidly rising general prices, such as during wars, chicken prices did not rise as rapidly as other farm prices resulting in a low purchasing power during those periods.

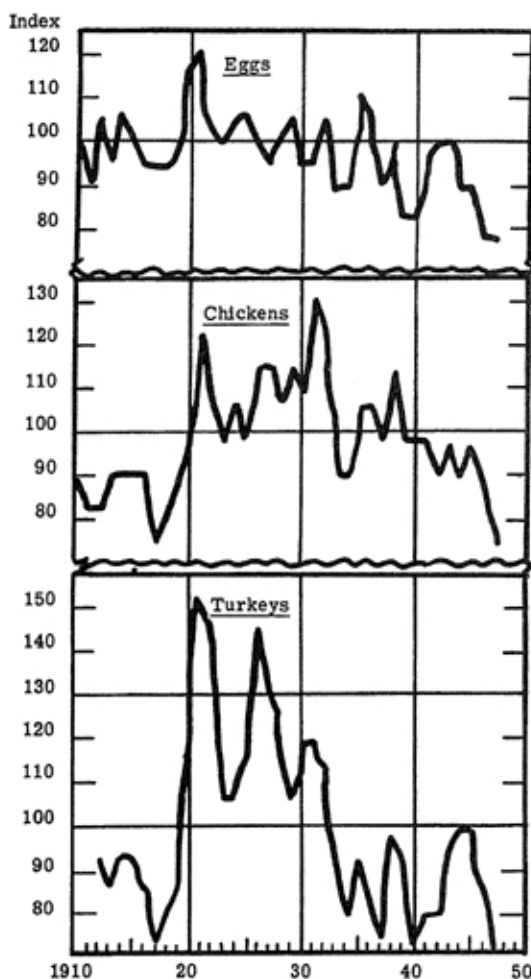


Fig. 6. - Indexes of Purchasing Power of Poultry Products (1910 - 39 = 100)

Turkeys.—The purchasing power of Missouri turkeys (Figure 6) followed the pattern which is considered typical for relatively new products. The purchasing power was very high during the period when it was new or unusual, and it declined rapidly as its production and acceptance became more general and standardized. The purchasing power of turkeys dropped sharply from 1920 until the middle thirties. Since that period it has stabilized at levels 85% to 90% of the 1912-39 average. Missouri turkey production has increased rapidly since the early thirties. During the five-year period 1930-34, Missouri produced an average of 426,000 turkeys; during 1935-39 the yearly average was 1,051,000; and during 1940-44 it was 1,445,000. The levelling out of the purchasing power of turkeys since the late thirties has been accompanied by stabilization of turkey numbers at about 1,300,000 to 1,500,000 birds. The variations in purchasing power were irregular and more violent than those of the chicken purchasing

power. The price of turkeys, like the price of chickens, has a tendency to strengthen relatively during periods of generally declining prices, resulting in a high purchasing power of turkeys during these times.

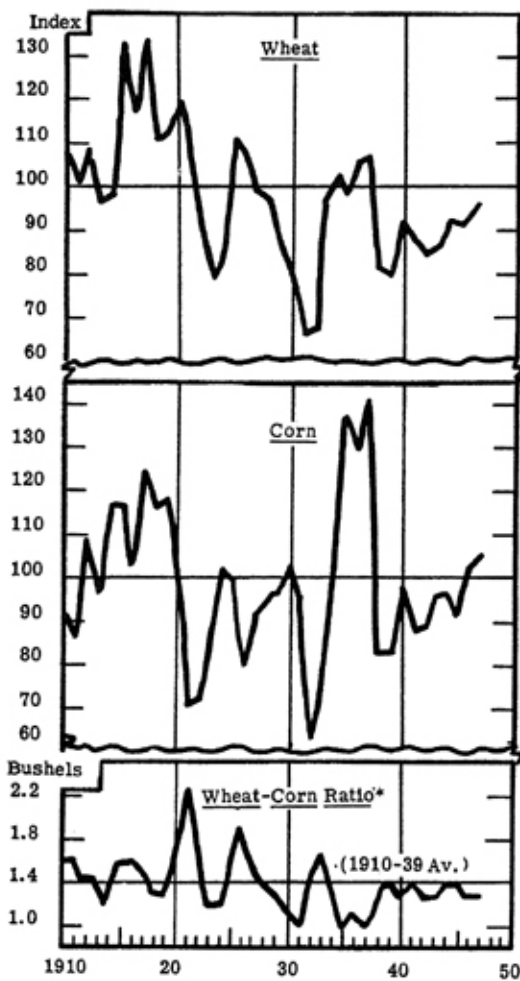
PURCHASING POWER OF MISSOURI GRAINS

The purchasing power of grains fluctuated widely from year to year with no definite cyclic pattern evident. Wide fluctuation in purchasing power was the rule rather than the exception. One of the causes of violent fluctuation in purchasing power was abnormal weather conditions resulting in small or large crops. The violent fluctuations due to this situation were well illustrated by the greatly increased purchasing power of all the grains during 1934-37. The great increase was largely the result of the short crops caused by the severe droughts of 1934 and 1936.

Wheat.—After being very high during the World War I period, the trend of the purchasing power of Missouri wheat (Figure 7) has been downward. Since 1920 the purchasing power of wheat has been above the 1910-39 average only during five years. For the 10-year period 1936-45, the index of purchasing power averaged 9% below the 1910-39 levels. Changes in purchasing power from year to year have been very great. Since World War I, wheat production in Missouri has had a downward trend. Production during 1940-44 averaged about 19 million bushels compared to the 39.5 million bushel average production during 1915-19.

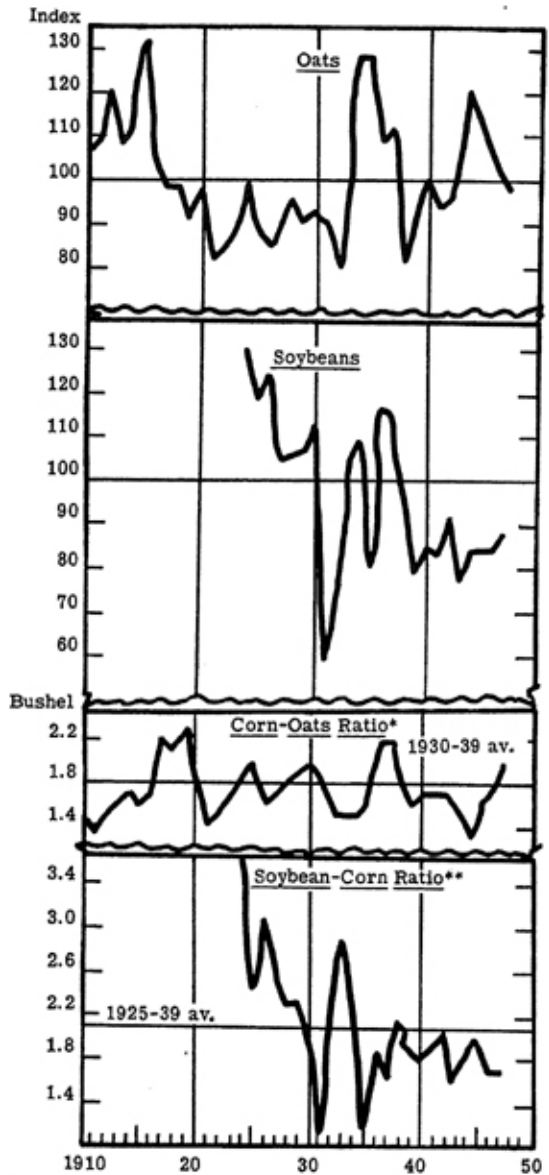
Corn.—There was no significant trend in the purchasing power of Missouri corn (Figure 7). Since 1920, the purchasing power has been above the long-time average during only six years—three of which were in the drought period of the mid-thirties. For the 20-year period 1926-45, the purchasing power averaged only 2% below the 1910-39 average. However, if the abnormally high years of 1935, 1936 and 1937 are excepted, the average was 9% below the long-time average. The price of corn was very sensitive to changing conditions. During periods when the general level of prices was falling such as during 1920-21, 1930-32, and 1937-38, the price of corn fell drastically in relation to the prices of other farm products. Though the production of corn has recovered somewhat from the extreme low periods of the 1930s, the general trend of Missouri corn production has been downward. During 1940-44, the average production was slightly over 137 million bushels in comparison to the 195 million bushel average production during 1910-14.

Oats.—The purchasing power of oats (Figure 8) was downward from 1910 to 1932, since then the trend has been upward. Much of



*Bushels of corn 1 bushel of wheat will buy.

Fig. 7. - Indexes of Purchasing Power of Crops (1910 - 39 = 100)



*Number of bushels of oats 1 bushel of corn will buy.

**Number of bushels of corn 1 bushel of soybeans will buy.

Fig. 8. - Index of Purchasing Power of Crops (1910-39 = 100)

the decline in the relative price of oats from 1910 to 1930 was probably due to the decreased demand for oats as our farming operations gradually shifted from horse power to tractor power. For the ten-year period 1937-46, the purchasing power of oats averaged 2% higher than the 1910-39 average. The trend of Missouri oats production was generally downward until the early 1930s, since then it has been upward. The average production of over 48 million bushels during 1940-44 was higher than for any like period since 1910.

Soybeans.—Since soybeans are a relatively new crop, price data

are available only back to 1924. From 1924 until 1939 the purchasing power of soybeans (Figure 8) was sharply downward. This sharp downward trend is characteristic of the purchasing power of new products during the first few years of development. Since 1939 the purchasing power of soybeans has levelled out at about 85% of the 1925-39 average. Fluctuations in purchasing power were extremely violent during the early thirties. The price of soybeans declined more in relation to the general price drop, 1930-32, than did any of the other six crops here considered. Though the general trend of soybean production in Missouri has been upward, it has fluctuated violently. The average production of 5,957,000 bushels during 1940-44 was more than ten times the average production of 547,000 bushels during 1925-29.

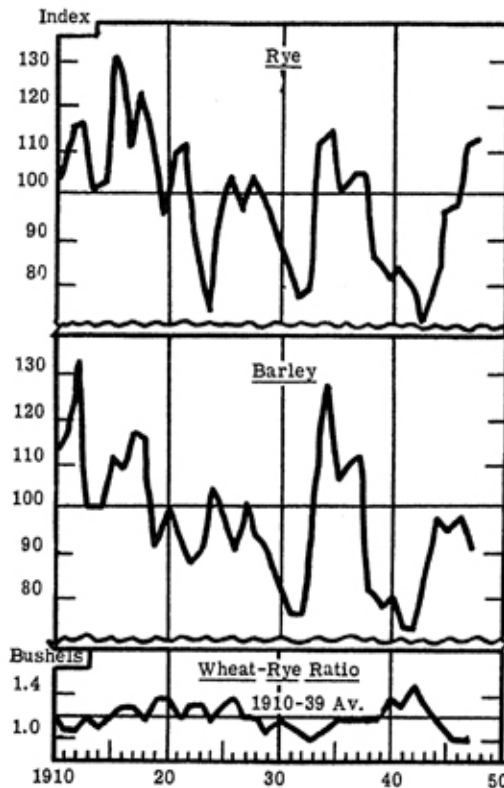


Fig. 9. - Index of Purchasing Power of Crops
(1910 - 39 = 100)

Rye.—The trend of the purchasing power of rye (Figure 9) has been downward until the early 1920s. Since that time it has shown no definite trend either upward or downward. In general, the ups and downs of the purchasing power of rye have been closely related to that of wheat. The Missouri production of rye has fluctuated widely. Production was generally downward until the late twenties. Since that time it has increased.

Barley.—The purchasing power of barley (Figure 9) has had a

downward trend throughout the period. As with other crops, the low production during the mid-thirties resulted in a sharp increase in purchasing power. The average purchasing power of barley for the period 1936-45, however, has been only 88% of the long-time average. The trend in Missouri barley production has been upward since 1910. In the five-year period 1940-44, the average production was slightly over 3 million bushels compared to the 1915-19 average production of slightly more than 150 thousand bushels.

Ratios.—Perhaps more important than the trends of the purchasing power of individual crops is the change in the relationship between closely related and competitive crops (Figures 7, 8, 9). To picture this relationship, ratios between the prices of two crops were developed. With the exception of the soybean-corn relationships, there has been little change in the long-time price relationships between specific crops.

The relationship between corn and oat prices and between wheat and rye prices, though fluctuating from year to year showed neither a trend up nor down. One bushel of corn would exchange for 1.8 bushels of oats and one bushel of wheat would exchange for 1.2 bushels of rye on the average. The wheat-rye relationship has fluctuated through much wider limits.

On the average during 1910-39, wheat would change for 1.4 bushels of corn. There has been a slight tendency for corn to become more expensive in terms of wheat. However, for the past ten years 1938-47, the relationship has fluctuated from the average of 1.4 to slightly lower. Corn also has become more valuable in terms of soybeans since 1925. During the 15-year period 1925-39, a bushel of soybeans would exchange for 2.1 bushels of corn. For the 10-year period, 1936-45, however, a bushel of soybeans would exchange for only 1.9 bushels of corn.

PURCHASING POWER OF MISSOURI HAY AND SMALL SEEDS

Hay.—The trend of the purchasing power of hay (Figure 10) has been downward. Only during 1911 through 1915 and in 1935-36 has the purchasing power been substantially above the 1910-39 average. Similar to other crops, the purchasing power has fluctuated irregularly from year to year. Hay purchasing power for the period 1940-47 has averaged only 70% of the long-time average. Missouri production of tame hay tended to decrease from 1920 until 1940. However, the 3,684,000 ton average production during 1940-44 was larger than any similar five-year period since 1910.

Small Seeds.—The trend of purchasing power of timothy seed (Figure 10) has been downward since 1910. Since 1936, timothy

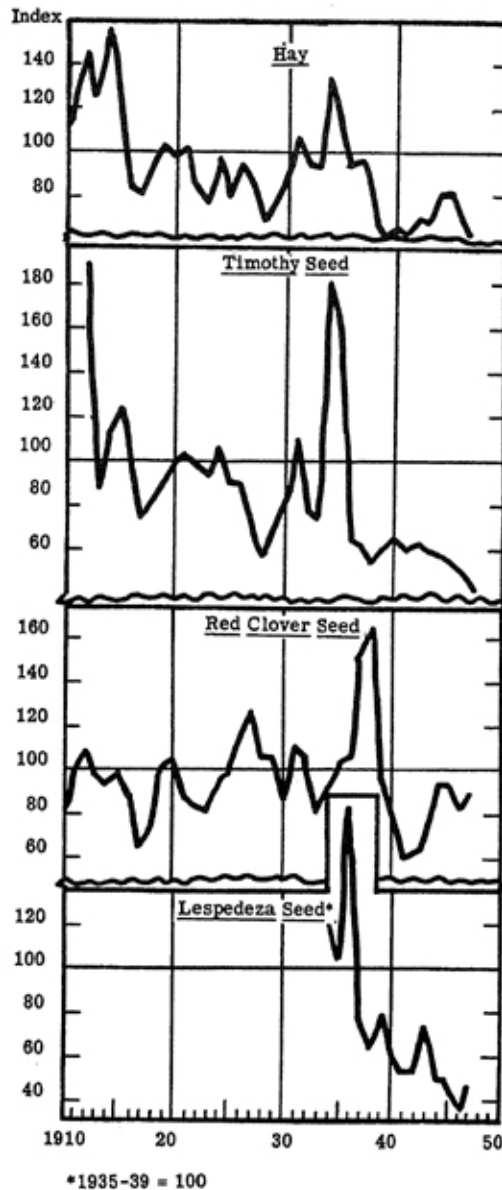


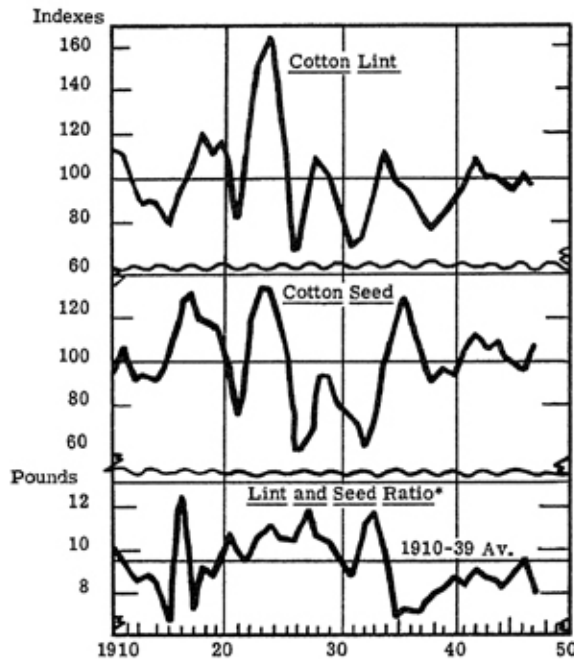
Fig. 10. - Indexes of Purchasing Power of Hay and Small Seeds (1910 - 39 = 100)

seed prices have been about 40% below their long-time relationship to all other farm prices. On the other hand, the trend of purchasing power of red clover seed has been slightly upward from 1910 through 1938. Since 1938, red clover seed prices have also been below their long-time relationship to other farm prices. The purchasing power of lespedeza seed has been sharply downward since a record of prices first became available in the mid-thirties. Since lespedeza was a comparatively new crop in American agriculture, this sharp downward trend was expected. Missouri production of timothy seed and red

clover seed has fluctuated widely since 1910. Lespedeza seed production has increased rapidly since the mid-thirties with the average production during 1940-44 more than four times the average production during 1935-39.

PURCHASING POWER OF MISSOURI COTTON

Cotton Lint.—The purchasing power of Missouri cotton lint (Figure 11) rose from 1910 to a peak of about 60% above average during 1923-24 after which it broke to a low of 35% below average in 1926. Since 1926 the trend has been irregularly upward. The purchasing power of cotton lint during the decade of the thirties was 13% less than the long-time average—only during 1934 did it rise above the long-time average. For 1940-47 the purchasing power of cotton just about equalled the long-time 1910-39 average. The purchasing power of cotton has fluctuated widely and irregularly. Since 1910, the production in Missouri for each new five year period has been greater than the preceding period. During 1910-14, the average production was 72,000 bales; during 1940-44 it was 397,000 bales.



*Number of pounds of seed 1 pound of lint will buy.

Fig. 11. - Indexes of Purchasing Power of Cotton Lint and Seed (1910 - 39 = 100)

Cotton Seed.—In general, the trend of the purchasing power of cottonseed has been closely related to that of cotton lint (Figure 11). The up and down fluctuations of seed purchasing power corresponded

closely with fluctuations of lint purchasing power. However, the upward trend of purchasing power of cotton seed since the late 1920s has been more pronounced than that of cotton lint. During the period 1930 to 1946, the position of cottonseed strengthened in relation to the position of cotton lint (see the lint-seed ratio). The production of cottonseed has moved up and down with the production of cotton lint.

PURCHASING POWER OF MISSOURI FRUIT AND TRUCK CROPS

The year to year purchasing power of fruit and truck crops fluctuated more violently than any other commodity group. Purchasing power indexes of 100% or more above the long-time average and 50% or more below that average have occurred in many of the eleven fruit and truck crops studied. As with grains and other crops the principle cause of these violent fluctuations was a great variation in the year to year production. Since the critical period of the various kinds of fruit production from the standpoint of weather occurs at about the same time, extremely poor or good crops tended to occur simultaneously. This meant that the extreme fluctuations in the purchasing power of different fruits tended to occur at the same time. This tendency was not as evident in the purchasing power of the truck crops which were studied.

It will be noted that production of many of the fruits has been declining through the years while the purchasing power has been increasing or remaining steady. This may be an example of a relative increase in the cost of production without a corresponding relative increase in prices received. This would result in lower profit margins and decreasing production.

Fruits.—Apples. The purchasing power of apples (Figure 12) has had an irregularly upward trend since 1910. During this same period the production of apples in Missouri has declined substantially. Year to year fluctuations in the purchasing power of apples were not as violent as other fruits studied.

Pears. The purchasing power of pears has fluctuated widely from year to year and has had a slightly downward trend since 1930. The purchasing power of pears has fluctuated from 142% above the long-time average in 1921 to 44% below that average in 1937. In 1921 the pear production was 1.4% of preceding year, while in 1937 the production was over 6 times greater than the preceding year. Pear production has fluctuated violently since 1910 with no consistent trend.

Peaches. There has been no trend either up or down in the purchasing power of peaches since 1910. The year to year fluctuations were the most violent of any of the fruits studied, and there was a tendency for the purchasing power to be up one year and down the

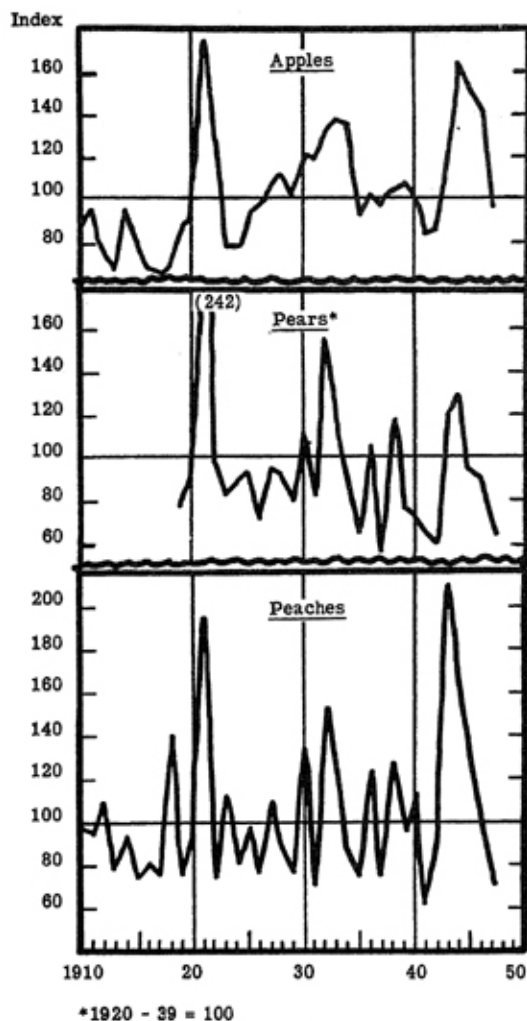


Fig. 12. - Indexes of Purchasing Power of Fruits
(1910 - 39 = 100)

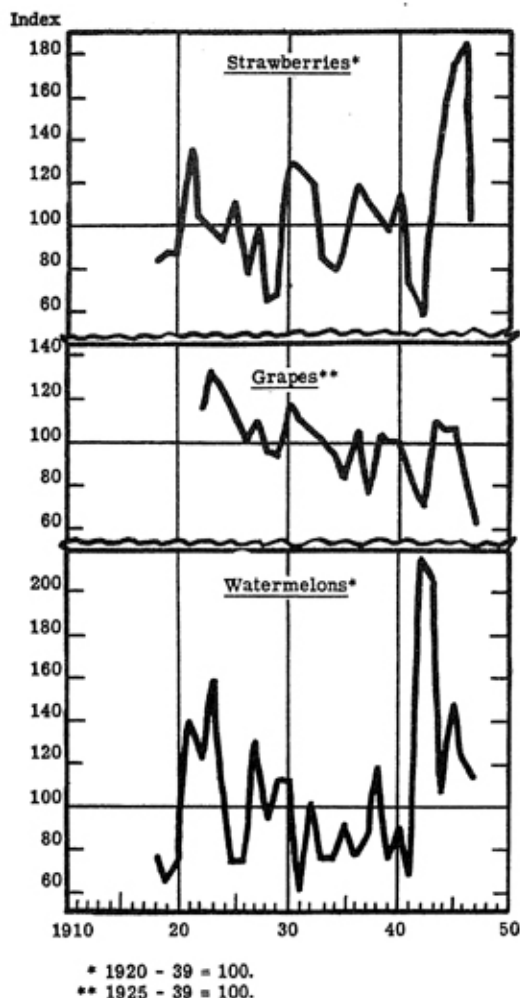


Fig. 13. - Indexes of Purchasing Power of
Fruits and Truck Crops

next. Production has fluctuated widely and had a slight downward trend.

Strawberries. There has been no definite trend in the purchasing power of strawberries (Figure 13). The purchasing power did not fluctuate as widely from year to year as did that of pears and peaches. There was some tendency for strawberry prices to move through irregular cycles of from 3 to 5 years. Missouri strawberry production has declined markedly since the early 1920s.

Grapes. The trend of the purchasing power of grapes has been downward since the early 1920s. Year to year fluctuations of the purchasing power were much less severe than those of the other fruits. The production of grapes increased until the early 1930s, since it has fallen off markedly.

Truck Crops.—Potatoes. The trend of the purchasing power of

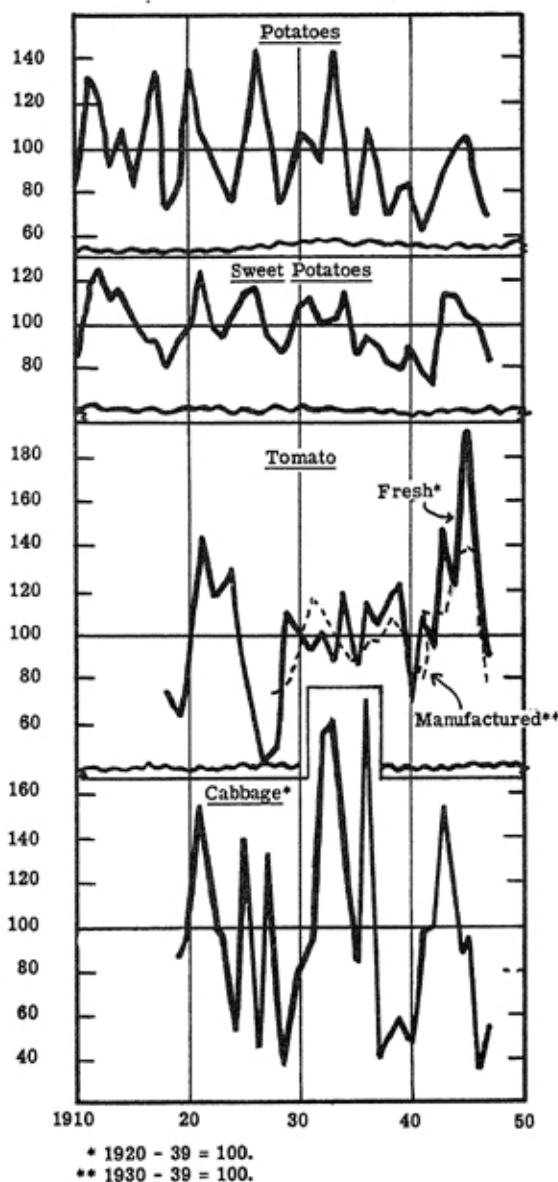


Fig. 14. - Indexes of Purchasing Power
 of Truck Crops
 (1910 - 39 = 100)

potatoes (Figure 14) has been generally downward, especially since the mid 1920s. The purchasing power tended to move in cycles approximately 3 years in length. Potato production has been declining slightly in Missouri since 1920.

Sweet Potatoes. There has been a downward trend in the purchasing power of sweet potatoes throughout the period which closely approximated the downward trend of the purchasing power of potatoes. The purchasing power of sweet potatoes tended to move up and down with that of potatoes. The production of sweet potatoes has had a downward trend since the mid-1920s.

Tomatoes. The trend in the purchasing power of fresh tomatoes has been upward since 1930. There has been no definite trend in the purchasing power of tomatoes sold for manufacture. This has resulted from the strengthening of fresh tomato prices relative to that received for tomatoes sold to canners. The general trend of fresh tomato production has been upward. The production of tomatoes for canning purposes varied widely from year to year with no evident trend.

Cabbage. The purchasing power of cabbage had the most violent year to year fluctuations of any of the fruit or truck crops studied. There has been no general trend either up or down in purchasing power. The violent fluctuations were very erratic and no cyclic pattern was evident. There has been no definite trend in the Missouri production of cabbage since 1920.

Watermelons. The trend of the purchasing power of watermelons (Figure 13) was downward through the 1920s and 1930s. Since 1941 it has been upward. The purchasing power tended to move in irregular cycles of from 2 to 3 years in length. Watermelon production fluctuated widely throughout the period with an upward trend from the middle 1920s through the late 1930s. Since 1940, production has been sharply downward.

SUMMARY

This study has constructed and analyzed the purchasing power of thirty-six Missouri farm products in terms of the prices received by U. S. farmers for all farm commodities from 1910 to 1947. A brief summary of the trends and characteristics of the purchasing power of each of the various commodities is given below.

Beef Cattle.—The purchasing power trend has been upward since 1920. The cycle in purchasing power averages about 14 to 16 years in length, though recently it has been somewhat shorter. The purchasing power cycle turned upward in 1944.

Veal Calves.—Both the long-time trend and the cycles of purchasing power correspond closely to those of beef cattle.

Milk Cows.—The trend of the purchasing power was slightly downward until 1939. Beef cattle and milk cow prices moved up and down together, but the cycles of milk cow prices fluctuate more widely. The purchasing power probably reached its low point for this period in 1944.

Hogs.—There has been no definite trend of purchasing power. Purchasing power has moved in irregular cycles of from 4 to 6 years in length. The purchasing power of hogs turned upward in 1944. The thirty-year average hog-corn ratio was 11.

Lambs.—The purchasing power trend of lambs has been upward

since 1910. There has been two complete 10-year cycles in lamb prices since 1910. Purchasing power turned upward in 1945.

Sheep.—The purchasing power trend of sheep has been sharply downward. Cycles in sheep prices corresponded rather closely with the lamb price cycles. The purchasing power of sheep has been sharply downward since 1939.

Wool.—There has been no trend of the purchasing power of wool. Generally, there was a tendency for wool and sheep prices to move up and down together. The purchasing power has been sharply downward since 1941.

Horses and Mules.—The trend of the purchasing power of both has been downward. In times of rapidly rising prices, the purchasing power tends to weaken; in times of rapidly falling prices, it tends to strengthen.

Dairy Products

Wholemilk.—The trend of the purchasing power has been upward since World War I. Wholemilk prices do not fall as rapidly relative to other products in falling price periods, nor do they rise as rapidly in rising price periods.

Butterfat.—The purchasing power trend was upward until 1929. After 1929 it declined abruptly and has fluctuated at lower levels. Since 1929, wholemilk has become more valuable relative to butterfat.

Poultry Products

Eggs.—The trend of the purchasing power has been downward since 1920. There is a tendency for relative prices to move in 3 to 4 year cycles. The purchasing power during 1946 and 1947 was the lowest recorded since 1910.

Chickens.—The purchasing power trend was upward until 1931, but since then has been downward. The purchasing power tends to alternate—one year up, one year down. During periods of rapidly falling prices, the purchasing power increases. During periods of rapidly rising prices, the purchasing power decreases. The purchasing power has fallen sharply since 1945.

Turkeys.—The purchasing power was sharply downward until the middle thirties, since then it has stabilized somewhat but fluctuated widely. The purchasing power in 1947 was the lowest recorded since 1912.

Grains

In general the purchasing power of grains fluctuated widely from year to year. Much of this fluctuation was due to the variation in the size of the crop.

Wheat.—Since World War I, the trend of purchasing power has been downward.

Corn.—There has been no significant purchasing power trend either upward or downward. During periods of sharply falling prices, the relative price of corn declined severely.

Oats.—The trend of purchasing power was downward until 1932, since then it has been upward.

Soybeans.—From 1924 to 1939 the trend of purchasing power was sharply downward. Since then it has tended to level out.

Rye.—Until the early 1920s, the trend of purchasing power was downward. Since that time, there has been no definite trend either upward or downward. Generally, the purchasing power moves closely with that of wheat.

Barley.—The trend of purchasing power has been downward throughout the period.

Hay and Small Seeds

Hay.—The trend of purchasing power has been downward.

Small Seeds.—The trend of purchasing power of timothy seed prices has been downward since 1910. That of red clover seed has been slightly upward throughout most of the period. The purchasing power of lespedeza seed has been sharply downward since the mid-thirties.

Cotton Lint and Seed

Cotton Lint.—The purchasing power has had very erratic fluctuations, but since 1926 the trend has been slightly upward.

Cotton Seed.—The purchasing power of seed has been closely related to that of lint. However, since 1930 the price of seed has strengthened relative to the price of lint.

Fruit and Truck Crops

Year to year fluctuations of purchasing power were greater for fruit and truck crops than for any other commodity group.

Apples.—The trend in purchasing power has been irregularly upward since 1910.

Pears.—There has been a slight downward trend of purchasing power since 1930.

Peaches.—There has been no trend in purchasing power since 1910. The year to year fluctuations were the most violent of any fruit studied.

Strawberries.—There has been no definite trend in purchasing power. There was some tendency of a 3- to 5-year cycle of price, though it was highly irregular.

Grapes.—The trend of purchasing power has been downward since the early 1920s. Yearly fluctuations were not as severe as those of other fruits.

Potatoes.—The trend of purchasing power of potatoes has been downward. There was some tendency for the purchasing power to move in three year cycles.

Sweet Potatoes.—The trend of purchasing power has been downward and has been closely related to that of potatoes.

Tomatoes.—The trend of purchasing power of fresh tomatoes has been upward since 1920, but there has been no definite trend of the purchasing power of those used for canning.

Cabbage.—There has been no trend of purchasing power, but its year to year fluctuations were the most violent of the fruit and truck crops studied.

Watermelons.—The trend in purchasing power was downward until 1941, since that time it has been upward. There was a tendency toward an irregular cycle of from 2 to 3 years.

TABLE 1, PART 1: INDEXES OF PURCHASING POWER OF MISSOURI FARM PRODUCTS 1910-47
(1910-39 = 100)

Year	Livestock									Dairy Products		Poultry Products			Hay and Seeds			
	Beef Cattle	Veal Calves	Milk Cows	Hogs	Lambs	Sheep	Wool	Horses	Mules ^{1/}	Whole Milk ^{2/}	Butter-fat ^{2/}	Eggs	Chickens	Turkeys ^{3/}	Hay	Red Clover Seed	Timothy Seed	Lespedeza Seed ^{4/}
	Cwt. 5.88	Cwt. 6.88	Head 42.80	Cwt. 6.84	Cwt. 7.05	Cwt. 4.12	Lb. .226	Head 72.00	Head 82.10	Cwt. 1.53	Lb. .244	Doz. .18	Lb. .122	Lb. .158	Ton 9.14	Bu. 9.84	Bu. 2.48	Lb. .064
1910	83	83	98	117	80	108	106	176		103	96	106	90		101	70		
1911	86	87	105	93	72	92	84	186		111	91	89	82		130	98	230	
1912	99	91	107	99	78	97	89	175		102	100	106	82	89	146	109	192	
1913	108	102	124	109	83	103	84	170		107	100	94	90	82	123	97	85	
1914	114	109	133	109	88	107	75	159		108	100	106	90	89	157	94	114	
1915	114	111	135	97	102	126	111	159		96	101	100	90	89	141	98	125	
1916	103	101	122	105	101	126	115	136		88	95	94	90	82	83	86	107	
1917	87	117	95	117	102	126	124	94		78	82	94	74	70	82	63	73	
1918	90	115	94	116	100	130	133	83		91	84	94	82	76	97	76	81	
1919	86	80	93	113	89	107	106	69		96	91	100	90	82	104	102	90	
1910-19	97	100	111	108	90	112	103	141		98	94	98	86	82	116	89	122	
1920	73	75	91	90	77	85	75	67		97	104	117	98	127	99	105	100	
1921	83	88	98	92	81	78	53	80	102	110	109	122	123	146	101	88	103	
1922	78	80	82	96	104	101	89	61	79	89	95	100	107	139	83	84	97	
1923	77	78	79	70	104	95	115	56	76	99	111	100	98	101	78	82	94	
1924	77	79	77	73	107	101	111	54	73	96	103	106	107	101	99	96	106	
1925	78	80	73	105	111	102	111	50	67	91	102	106	98	114	79	99	90	
1926	85	95	86	123	115	101	106	59	77	94	105	100	115	139	96	113	89	
1927	99	106	99	101	117	107	106	56	74	96	115	94	115	127	87	128	68	
1928	115	115	118	86	117	112	120	57	75	91	114	100	107	120	70	106	56	
1929	117	120	127	95	117	107	106	60	78	94	117	106	115	101	78	105	69	
1920-29	88	92	93	93	105	99	99	60	78	96	108	105	108	122	87	101	87	
1930	114	112	105	103	95	92	80	62	82	100	100	95	107	114	90	85	84	
1931	114	116	106	98	99	83	75	76	98	116	105	95	131	114	107	113	111	
1932	113	108	102	75	100	85	71	99	122	102	94	106	123	108	94	106	77	
1933	99	98	87	73	104	83	115	108	128	97	97	89	90	89	94	80	73	
1934	87	79	64	67	105	82	120	104	123	102	93	89	90	76	134	92	183	120
1935	118	103	86	119	101	92	89	113	128	98	96	111	107	89	120	103	162	103
1936	106	100	86	122	109	89	111	111	128	104	105	106	107	82	94	107	65	177
1937	121	105	89	119	112	91	120	99	121	104	103	89	98	70	95	150	63	77
1938	130	130	114	120	110	92	93	114	135	118	98	100	115	95	68	166	56	66
1939	143	137	125	100	121	101	111	111	133	114	91	83	98	89	61	96	62	80
1930-39	115	109	96	100	105	89	99	100	120	106	98	96	107	93	96	110	94	104
1940	138	133	120	78	120	93	137	95	116	112	103	83	98	70	66	78	67	59
1941	130	128	115	109	113	93	137	69	88	108	105	95	98	76	62	59	60	53
1942	120	117	114	122	109	83	115	64	80	105	96	100	90	76	69	63	63	55
1943	110	103	117	105	99	82	106	59	77	112	102	100	98	89	68	75	60	75
1944	101	93	107	98	96	76	97	52	74	126	116	89	90	95	81	95	59	50
1945	109	96	108	102	95	78	93	38	63	117	122	89	98	95	81	93	56	48
1946	116	100	115	106	98	74	84	31	54	118	123	78	90	82	68	84	52	38
1947	126	119	112	129	108	65	66	26	44	97	99	78	74	63	61	91	41	47
1940-47	119	111	114	106	104	81	104	54	75	112	108	89	92	81	70	80	57	53

1. 1921-39 = 100 2. Includes government subsidy payments Oct. 1943 through June, 1946. 3. 1912-39 = 100 4. 1935-39 = 100

TABLE 1, PART 2.

Years	Grains						Cotton		Fruits 1/					Truck Crops 2/					
	Wheat	Corn	Oats	Soy-beans ^{2/}	Rye	Barley	Cotton Lint	Cotton Seed	Apples	Pears ^{3/}	Peaches	Strawberries ^{3/}	Grapes ^{2/}	Po-tatoes	Sw. Po-tatoes	Tomatoes		Cab-bage ^{3/}	Water-melons ^{3/}
	Bu. .887	Bu. .642	Bu. .366	Bu. 1.31	Bu. .739	Bu. .592	Lb. .113	Ton 25.00	Bu. 1.04	Bu. .82	Bu. 1.18	Crate 2.63	Ton 43.50	Bu. .908	Bu. 1.06	Bu. .96	Ton 11.55	Ton 22.58	Each .107
1910	108	94	107		104	112	112	102	85		97			72	86				
1911	100	86	109		114	117	112	110	97		94			133	115				
1912	108	107	120		115	133	88	94	76		110			118	126				
1913	97	95	107		100	100	89	94	68		76			91	112				
1914	98	117	118		103	100	89	92	97		94			109	114				
1915	134	115	131		130	112	77	111	78		73			80	104				
1916	117	103	104		110	108	94	130	67		81			110	92				
1917	135	125	98		123	117	104	132	66		75			135	93				
1918	112	115	98		112	115	123	120	70		142	83		73	80	75		83	75
1919	113	118	90		93	91	111	117	89	77	73	86		83	93	64		84	65
1910-19	112	108	108		110	111	100	110	79		92			100	102				
1920	121	104	101		108	100	118	98	92		107	86		141	97	83		97	75
1921	112	70	82		111	93	81	74	177	242	195	137		109	125	145		157	140
1922	88	73	85		87	88	122	119	129	95	73	102	113	100	99	117		99	122
1923	78	90	90		72	90	154	135	78	82	114	98		133	84	94		88	159
1924	89	103	101	131	92	105	164	135	79	90	80	92	122	74	99	131		51	140
1925	112	100	87	118	104	100	120	104	91	93	98	112	115	97	113	93		141	75
1926	107	79	85	124	95	90	66	58	98	70	75	75	101	147	117	63		42	75
1927	99	92	93	104	103	101	88	65	108	96	110	99	110	115	94	43		134	131
1928	98	97	96	105	100	93	109	92	113	93	87	64	94	71	87	48	72	33	94
1929	86	97	90	107	92	90	104	92	102	77	76	68	92	82	89	112	77	50	112
1920-29	99	91	91	115	96	95	113	97	107	103	102	93	110	102	101	96		89	112
1930	79	104	93	117	83	81	81	78	121	113	140	129	117	108	106	101	101	78	112
1931	67	93	90	59	76	76	70	73	119	81	66	127	110	104	112	94	115	93	56
1932	68	64	79	74	77	76	72	59	132	157	154	121	104	91	99	102	109	188	103
1933	97	79	98	102	111	103	91	72	137	113	120	84	99	145	102	90	99	197	75
1934	103	107	128	109	114	128	113	102	136	88	87	78	94	102	115	118	89	119	75
1935	98	137	128	80	100	106	99	130	92	62	73	96	81	67	84	84	87	81	94
1936	106	129	109	117	104	110	97	122	102	107	125	119	106	110	96	116	96	205	75
1937	107	142	112	115	104	112	84	106	98	56	74	112	74	100	92	105	96	41	84
1938	82	83	79	92	84	81	77	89	104	118	130	103	104	68	82	119	106	50	122
1939	81	83	93	79	80	78	86	96	109	76	95	95	99	81	78	123	101	57	75
1930-39	89	102	101	94	93	95	87	93	115	97	106	106	99	98	97	105	100	111	87
1940	94	98	104	85	83	81	89	94	103	73	115	115	99	83	92	68	101	48	94
1941	87	87	93	83	79	73	97	104	84	63	61	71	85	62	78	108	76	99	65
1942	85	89	96	92	69	73	112	112	87	60	97	56	69	77	72	92	108	101	215
1943	87	97	107	77	79	85	98	104	123	115	212	117	110	87	113	150	109	156	206
1944	92	97	120	84	96	98	98	109	165	132	164	159	106	96	114	116	128	86	103
1945	92	90	112	90	97	95	95	99	152	96	132	173	106	106	106	93	139	94	150
1946	94	103	107	84	111	98	104	94	140	90	98	186	181	78	101	129	126	32	122
1947	97	106	98	88	112	91	96	108	97	65	69	102	60	69	84	92	77	55	112
1940-47	91	96	105	85	91	87	99	103	119	87	119	122	102	82	95	106	108	84	133

1. Peaches, pears, grapes, tomatoes, cabbage and watermelons corrected by the average index of U. S. prices received July through November; strawberries by the average of the May-June index. 2. 1925-39 = 100. 3. 1920-39 = 100. 4. 1930-39 = 100.

TABLE 2: PRICE RATIOS BETWEEN SPECIFIED MISSOURI COMMODITIES 1.

Years	Hog-Corn	Butterfat-Wholemilk	Wheat-Corn	Wheat-Rye	Corn-Oats	Soybean-Corn	Cotton Lint-Seed
1910	13.0	15	1.6	1.2	1.5		10.0
1911	11.4	13	1.6	1.1	1.4		9.3
1912	10.0	16	1.4	1.1	1.5		8.5
1913	11.9	15	1.4	1.2	1.6		8.9
1914	10.0	15	1.2	1.1	1.7		8.5
1915	8.9	17	1.6	1.2	1.6		6.2
1916	10.7	17	1.6	1.3	1.7		12.4
1917	10.7	17	1.5	1.3	2.2		7.4
1918	10.1	15	1.3	1.2	2.1		9.2
1919	10.1	15	1.3	1.4	2.3		8.7
1910-19	10.7	15	1.5	1.2	1.8		8.9
1920	9.0	17	1.6	1.4	1.8		10.6
1921	14.1	16	2.3	1.2	1.4		9.9
1922	14.0	17	1.7	1.3	1.5		9.4
1923	8.3	18	1.2	1.3	1.7		10.6
1924	7.7	17	1.2	1.2	1.8	3.6	11.1
1925	11.1	18	1.6	1.3	2.0	2.4	10.4
1926	16.6	18	1.9	1.4	1.6	3.1	10.3
1927	14.1	19	1.5	1.2	1.7	2.5	12.0
1928	9.6	20	1.4	1.2	1.8	2.3	10.6
1929	10.5	20	1.3	1.1	1.9	2.3	10.3
1920-29	11.5	18	1.6	1.3	1.7	2.7	10.5
1930	10.5	16	1.1	1.2	2.0	2.0	9.3
1931	11.2	14	1.0	1.1	1.8	1.1	8.7
1932	11.9	15	1.4	1.1	1.5	2.9	11.0
1933	9.5	16	1.7	1.0	1.5	2.9	11.7
1934	6.4	15	1.3	1.1	1.5	2.2	9.7
1935	9.8	16	1.0	1.2	1.8	1.2	6.8
1936	10.5	16	1.1	1.2	2.2	1.9	7.2
1937	9.3	16	1.0	1.2	2.2	1.6	7.1
1938	16.4	13	1.4	1.2	1.8	2.2	7.8
1939	13.6	13	1.4	1.2	1.6	1.9	8.1
1930-39	10.9	15	1.2	1.2	1.8	2.0	8.7
1940	9.1	15	1.3	1.4	1.7	1.8	8.7
1941	14.3	15	1.4	1.3	1.7	1.9	8.4
1942	15.8	15	1.3	1.5	1.7	2.1	9.0
1943	12.6	15	1.3	1.3	1.6	1.6	8.6
1944	11.6	15	1.4	1.2	1.3	1.9	8.2
1945	12.9	17	1.4	1.1	1.6	2.0	8.7
1946	12.6	17	1.3	1.0	1.7	1.7	9.7
1947	13.6	16	1.3	1.0	2.0	1.7	7.9
1940-47	12.8	16	1.3	1.2	1.7	1.8	8.7
1910-39 av.	11.0	16	1.4	1.2	1.8	2.1	9.4

1. These ratios are in terms of prices received by Missouri farmers. They are defined as follows:

Hog-corn: Number of bushels of corn that one hundred pounds of hog would buy.

Butterfat-wholemilk: Number of pounds of wholemilk that one pound of butterfat would buy.

Wheat-corn: Number of bushels of corn that one bushel of wheat would buy.

Corn-oats: Number of bushels of oats that one bushel of corn would buy.

Soybean-corn: Number of bushels of corn that one bushel of soybeans would buy.

Cotton Lint-seed: Number of pounds of cotton seed that one pound of cotton lint would buy.

PRODUCTION OF MISSOURI FARM PRODUCTS

Trends in production of the various commodities are very important as an aid in interpreting the significance of purchasing power trends. Average production by five year periods (ten year periods for livestock) of important Missouri commodities are given in Table 3.

On the basis of these averages, the production of commodities can be classified as having an upward trend, a downward trend, or an irregular trend. Those commodities whose trend in production was upward are oats, barley, soybeans, lespedeza seed, cotton lint, cotton seed, fresh tomatoes, turkeys, wholemilk, milk cows and stock sheep.

TABLE 3: PRODUCTION OF MISSOURI FARM PRODUCTS

Commodity	Yearly Average by Periods						
	1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44
Corn (1000 bu.)	195,344	187,634	183,032	161,011	67,332	93,622	137,302
Wheat (1000 bu.)	33,672	39,536	34,508	19,370	21,838	33,468	18,853
Oats (1000 bu.)	25,904	36,100	34,326	33,864	36,044	39,654	48,678
Barley (1000 bu.)	128	154	150	184	302	2,140	3,032
Rye (1000 bu.)	183	516	227	138	179	595	506
Soybeans (1000 bu.)				547	1,080	773	5,957
Cotton Lint (1000 bu.)	72	60	122	200	248	332	397
Cotton Seed (1000 T.)	32	26	55	95	128	148	170
Hay (1000 tons)	2,413	3,179	3,518	3,172	2,448	2,551	3,684
Timothy Seed (1000 bu.)			331	305	227	321	168
R. Clover Seed (1000 bu.)			46	64	23	49	134
Lespedeza Seed (1000 lb.)						13,584	62,300
Apples (1000 bu.)	10,303	7,536	3,978	2,648	2,311	2,305	1,595
Grapes (tons)	7,200	5,940	5,440	8,000	10,000	7,700	5,320
Peaches (1000 bu.)	2,045	967	977	761	616	806	480
Pears (1000 bu.)	223	302	350	373	293	350	246
Strawberries (1000 crates)			522	928	385	235	228
Cabbage (tons)			5,100	6,400	6,300	6,400	5,600
Potatoes (1000 bu.)	4,622	4,784	4,654	4,487	4,115	3,899	4,166
Sw. Potatoes (1000 bu.)	682	721	900	818	829	786	787
Tomatoes (Fr.) (1000 bu.)			343	428	515	483	606
Tomatoes (Mfg.) (1000 tons)					37	20	39
Watermelons (1000)			3,310	2,330	2,490	3,884	2,719
Chickens (million)				41	48	29	35
Eggs (million)				2,461	2,193	1,812	2,543
Turkeys (1000)					426	1,051	1,445
Total Milk Produced (million lb.)				2,957	3,539	3,318	3,754
Cream (million lb.)				1,375	1,787	1,554	1,319
Whole Milk (million lb.)				338	467	556	1,423
Commodity	Yearly Average by Period*						
	1910-19	1920-29	1930-39	1940-48			
Hogs (1000)	3,832	4,235	3,370	3,945			
Milk Cows (1000)	762	818	994	1,013			
Other Cattle (1000)	1,877	1,716	1,588	2,075			
Stock Sheep (1000)	944	871	1,198	1,361			
Horses (1000)	1,072	750	545	497			
Mules (1000)	389	380	255	170			

* On farms January 1.

Those commodities whose trend in production was downward are corn, wheat, apples, peaches, strawberries, potatoes, milk sold as cream, horses and mules. Those commodities whose production was irregular and showed no definite upward or downward trend are as follows: rye, hay, timothy seed, red clover seed, grapes, pears, cabbage, sweet potatoes, tomatoes for manufacture, watermelons, chickens, eggs, hogs, and cattle other than milk cows.

RELATIONSHIP OF PRICES RECEIVED BY MISSOURI FARMERS TO THOSE RECEIVED BY U. S. FARMERS

Those who study trends in purchasing power over a period of years are interested in the changes in relationship of Missouri prices to U. S. prices. These relationships for the periods 1910-19, 1920-29, 1930-39 and 1940-47 are given in Table 4. Missouri prices of the following commodities have averaged above or equaled U. S. prices during all periods: hogs, beef cattle, lambs, wheat, apples, grapes, peaches, potatoes and cabbage. Missouri prices of some other commodities have averaged below U. S. prices during all periods. These commodities are eggs, chickens, wholemilk, butterfat, cotton, tomatoes and watermelons.

Violent movements of the general price structure cause considerable changes in the geography of price patterns. Generally speaking, the more distant from the point of consumption or the greater the marketing margins involved between producer and consumer the more violent the price change of a given commodity. In the four periods here analyzed, two were periods of rapidly rising and high prices—1910-19 and 1940-47; and two were periods of falling or relatively low prices—1920-29 and 1930-39. Because of this, Missouri price relationships to U. S. prices have fluctuated widely. This made it very difficult to analyze trends. Only in the cases of butterfat, peaches and fresh tomatoes have the trends of Missouri price in relation to U. S. been definitely upward; only grapes have shown a definite downward trend.

Some Missouri commodity prices definitely improved their relationship during times of falling and low prices (1920-29, 1930-39) when compared to the relationship during periods of rising and high prices (1910-19, 1940-47). These commodities were beef cattle, veal calves, corn, oats, apples, and potatoes. Other Missouri commodities had lower prices relatively during the periods of falling or low prices. These commodities were wholemilk and cotton.

TABLE 4: AVERAGE PRICES RECEIVED BY MISSOURI FARMERS COMPARED WITH PRICES RECEIVED BY U.S. FARMERS BY COMMODITIES, BY PERIODS

Commodity	Missouri Average Prices				U.S. Average Prices				Mo. Prices as % of U.S. Prices			
	1910-19	1920-29	1930-39	1940-47	1910-19	1920-29	1930-39	1940-47	1910-19	1920-29	1930-39	1940-47
	\$	\$	\$	\$	\$	\$	\$	\$	%	%	%	%
Hogs	9.72	9.61	6.81	13.80	9.74	9.35	6.71	13.79	100	103	102	100
Beef Cattle	7.27	7.71	6.50	12.63	6.90	7.16	5.79	11.91	105	108	112	106
Veal Calves	8.11	9.32	7.37	12.77	8.51	9.50	6.99	13.26	95	98	105	96
Sheep	6.09	6.08	3.62	5.09	6.38	6.84	3.48	6.12	96	89	104	83
Lambs	8.37	10.97	7.28	13.46	8.41	10.96	6.78	13.00	100	100	107	104
Wool	.317	.333	.220	.398	.285	.336	.204	.393	111	99	108	101
Eggs	.240	.29	.15	.300	.249	.292	.19	.331	96	99	79	91
Chickens	.135	.195	.125	.198	.147	.212	.142	.221	92	92	88	90
Wholemilk	1.97	2.23	1.60	3.00	1.99	2.47	1.69	3.04	99	90	95	99
Butterfat	.30	.39	.23	.46	.39	.47	.26	.49	77	83	89	94
Corn	.922	.87	.66	1.08	.95	.77	.58	1.05	87	113	114	103
Oats	.50	.50	.35	.56	.50	.42	.31	.59	100	119	113	95
Wheat	1.32	1.34	.76	1.43	1.24	1.26	.72	1.34	107	106	106	107
Hay	13.26	12.05	8.61	11.80	14.09	13.42	10.81	13.49	94	90	80	87
Cotton	.153	.191	.093	.196	.156	.207	.097	.201	98	92	96	98
Apples	1.06	1.63	1.15	2.33	.92	1.22	.79	1.98	115	134	146	118
Grapes		.68*	.40	.68		.29	.18	.51		234	222	133
Peaches	1.46	1.77	1.17	2.49	1.20	1.43	.84	1.79	122	124	139	139
Pears		1.23	.73	1.29		1.44	.72	1.82		85	101	71
Strawberries		3.55	2.77	6.08		3.81	2.61	6.05		93	106	101
Potatoes	1.16	1.41	.89	1.40	.99	1.05	.65	1.19	117	134	137	118
Cabbage		29.87	22.78	32.88		19.47	15.02	28.40		153	152	116
Tomatoes (Fr.)		1.35	.95	2.10		1.92	1.25	2.51		70	76	84
Tomatoes (Mfr.)			10.76	22.54			12.23	23.21			88	97
Watermelons		.176	.080	.261		.184	.105	.300		96	76	87

* 1924-29