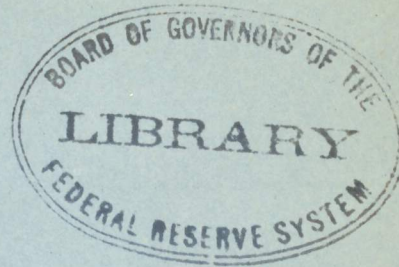


Works Progress Administration

F. C. HARRINGTON, Administrator



**PRICE DISPERSION
AND
INDUSTRIAL ACTIVITY,
1928 — 1938**

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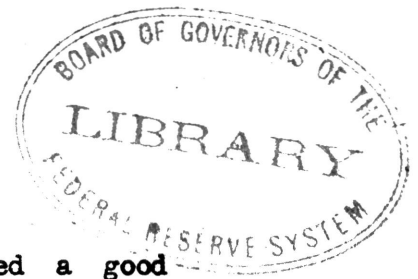
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PRICE DISPERSION AND INDUSTRIAL ACTIVITY,
1928-38 ^{1/}



The problem of "price disparity" has occupied a good deal of attention in recent years. In the depression of 1930-33 price relationships were badly distorted; again in the decline in 1937 this distortion reappeared. Some prices remain relatively inflexible during the decline in business, while other prices show enormous drops. On the upturn in business the flexible prices advance very rapidly and the indexes of these prices often go well beyond those of the inflexible price groups.

The economic significance of these changes in price groups cannot be ignored. A rapid increase in some price groups leads to a distortion of price-cost relationships and threatens the expansion of production and the maintenance of employment. On the other hand, the disparities during a period of declining production and employment aggravate depression conditions and contribute to unemployment.

Price movements and price disparities cannot be singled out as the causes of the ups and downs of business. They are, however, important contributing factors, and, in some cases, perhaps the decisive factors. During the depths of

^{1/}This report has drawn upon a more comprehensive study of the subject now in preparation by Mr. J. M. Cutts, of the Bureau of Labor Statistics, and Mr. Walter G. Keim, of the Works Progress Administration.

the 1930-33 depression, prices were far out of balance. During the recovery period 1934-36, price groups approached their predepression relationships. Early in 1937 price dispersion again developed and was followed by a sharp drop in production. Chart I shows the index of price dispersion and the index of industrial production. A decrease in price disparity in 1938 was accompanied by an upturn in production.

It is difficult to select a base year or base period in which ideal relationships exist among all prices. In one industry conditions may be favorable to the maintenance of a large volume of production and consumption. In another industry unfavorable conditions may prevail. There are, however, uniformities in the movement and characteristics of individual price series, and combinations of price levels which may be taken to represent an approximation to price balance. It is a familiar thesis that certain relationships among prices are more conducive to satisfactory industrial records of employment, production, and profits than are other relationships.

Various investigations of the relative soundness of the price structure have utilized the principle of price dispersion. The present study is limited to a statistical examination of the dispersion of price relatives as a means of describing and summarizing the varied trends of commodity prices over the last decade. This measure, of course, is only one of many criteria of price balance.

The Measurement of Price Dispersion

Frederick C. Mills has done the most extensive work in the field.^{1/} Among others who have investigated this aspect of price analysis, F. Y. Edgeworth utilized as the measure of dispersion the so-called "modulus", which is the standard deviation multiplied by the square root of 2.^{2/} Wesley C. Mitchell made effective use of deciles.^{3/} Dr. Silverstolpe employed the mean deviation in his analysis.^{4/} Irving Fisher has used the standard deviation computed from relative prices and from logarithms of relative prices.^{5/}

Norman Crump originally experimented with the arithmetic standard deviation and the logarithmic deviation.^{6/} His most practical compilations utilized the arithmetic coefficient of variation and a measure of the "angle of deviation derived from the standard deviation and the arithmetic mean."

1/The Behavior of Prices, Chap. III, Sec. IV, pp. 251-85.

2/Memoranda in Papers Relating to Political Economy (London: Macmillan & Co., 1925), Vol. I.

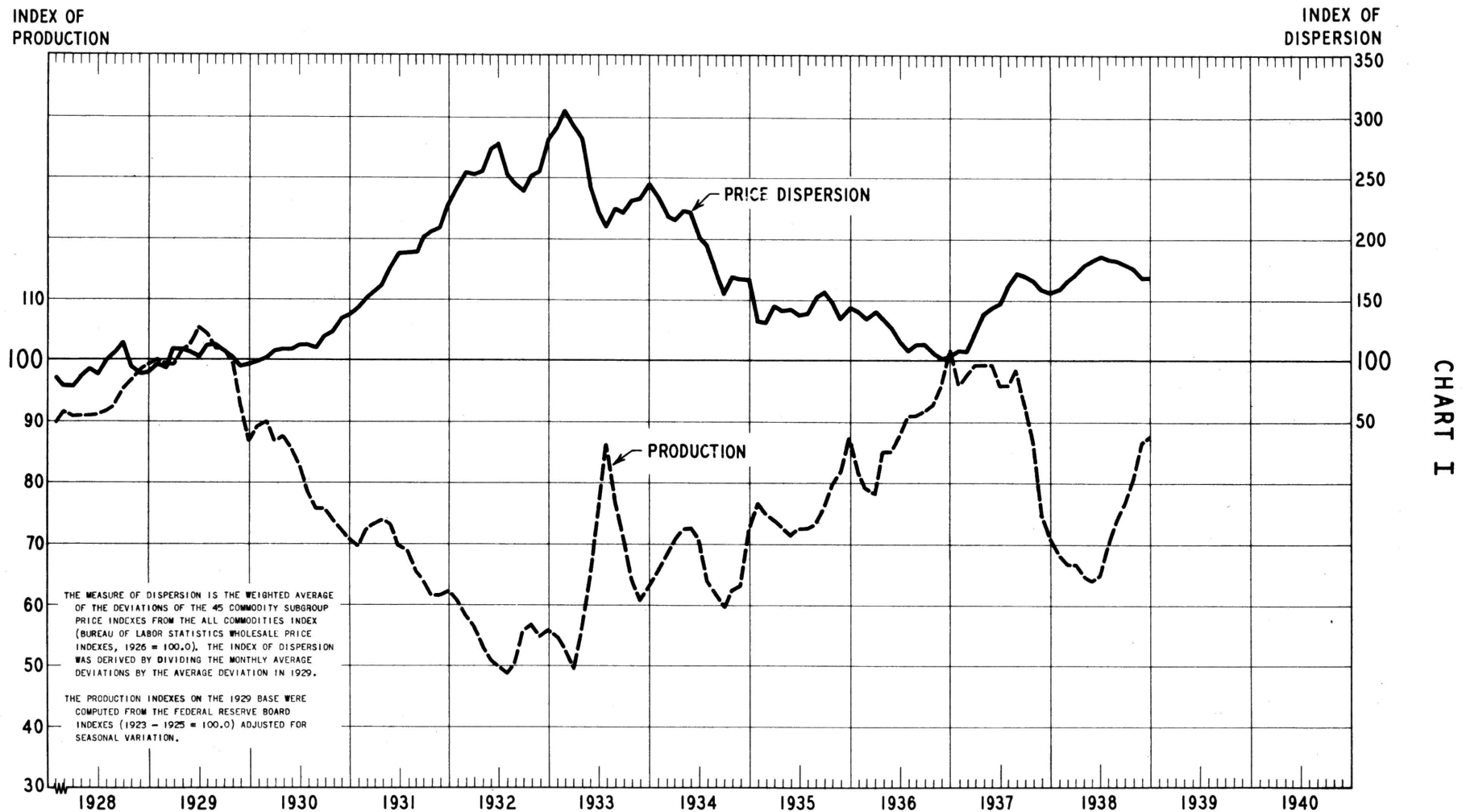
3/Business Cycles (Univ. of Calif. Press, 1913); and The Making and Using of Index Numbers (U. S. Dept. of Labor, Bur. of Labor Stat. Bull. 284, 1921), Part I.

4/Dr. Silverstolpe's measures have been published in the Goteborgs Handels och Sjöfarts-Tidning.

5/The Making of Index Numbers, A Study of Their Varieties, Tests, and Reliability (3d ed., Boston: Houghton Mifflin Co., 1927).

6/"The Interrelation and Distribution of Prices and Their Incidence Upon Price Stabilization," Journal of the Royal Statistical Society, 1924, Vol. 87, Part II. Mr. Crump's measures of dispersion are now published currently in the Financial Times of London.

INDEXES OF WHOLESALE PRICE DISPERSION AND INDUSTRIAL PRODUCTION



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A. L. Bowley has made use of the "mean percentage divergence", a measure similar to the mean deviation except that the variations which are averaged are the percentage deviations of individual relatives from their geometric mean.^{1/}

The measure worked out in the course of the present investigation is calculated by weighting the variations - which are the percentage deviations of individual relatives from their weighted mean - on a fixed base (the year 1926).

The index of dispersion plotted in Chart I and tabulated in Table I is simply a measure of the spread among prices. For the most part, it represents the spread between raw materials and finished goods prices (see Chart II), although the calculation involves the prices of 45 subgroups of commodities. The direction of the trend indicates whether prices are moving toward or away from their mean (the all-commodities level).

The computation of the index of dispersion involves, first, the calculation of the average percentage deviation which is the amount the price indexes differed from the mean price index.^{2/} In this method, the average is obtained by weighting the percentage deviation for each subgroup by its

^{1/}"Relative Changes in Price and Other Index Numbers," Special Memorandum, No. 5, (London and Cambridge Economic Service, February 1924).

^{2/}The subgroup indexes of the Bureau of Labor Statistics have been used in the calculation of the average deviation. The subgroup, "Structural Steel" was omitted, as it is included in the "Iron and Steel" subgroup.

COMPARISON OF THE LEVELS OF FINISHED GOODS & RAW MATERIALS PRICES WITH THE ALL COMMODITIES PRICE LEVEL

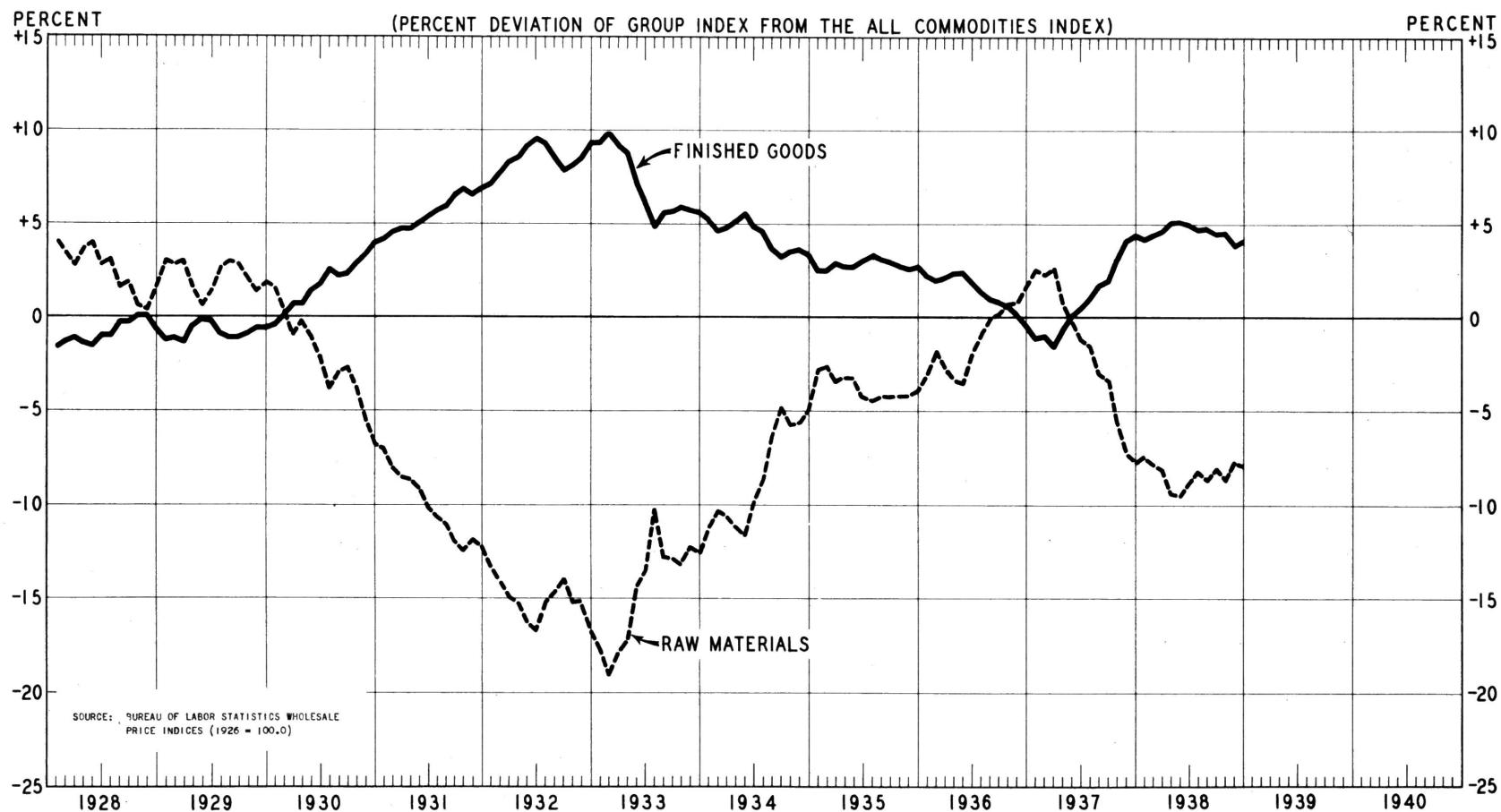


CHART II

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value of production in 1935. A weighted average deviation is then calculated for each month. This monthly figure is divided by the 1929 average deviation to obtain the monthly index number of price dispersion.^{1/}

In a technical sense the resultant figure indicates the representativeness of the all-commodities index. When the dispersion is relatively small, the composite price index is more representative of its components than when the dispersion is larger. During periods of relative stability when prices seem to move along together, showing only minor fluctuations, the representativeness of the all-commodities index varies little. In these periods, the index of dispersion maintains itself at a fairly constant level.

Large increases in the index of dispersion (indicating violent changes within the price structure) have been generally associated with recessions in business activity. The

$$\frac{1/}{\text{A. D.}} = \frac{\left|100 - \frac{x_1}{\bar{X}}\right|w_1 + \left|100 - \frac{x_2}{\bar{X}}\right|w_2 + \left|100 - \frac{x_3}{\bar{X}}\right|w_3 + \dots + \left|100 - \frac{x_n}{\bar{X}}\right|w_n}{100}$$

$$I = \frac{\text{A. D. for month}}{\text{A. D. for 1929}}$$

$x_1 \dots x_n$ = price index (1926 = 100) for commodity subgroup

\bar{X} = price index (1926 = 100) for "all commodities"

$w_1 \dots w_n$ = weight of each commodity subgroup -- percent of value of production of "all commodities" in 1935

n = number of subgroups = 45

A. D. = weighted average deviation

I = Index of Dispersion

inverse relationship between price dispersion and industrial production during the period 1928 to date is indicated by the -0.87 Pearsonian coefficient of correlation. (See Chart I.)

Frederick C. Mills conducted his investigations with price dispersion prior to 1926. The present study covers the period from 1926 to date. Mills shows that the dispersion of fixed-base relatives increases naturally over a period of years. Our index of price dispersion (1929=100) increased very rapidly from the base year of the wholesale price indexes (1926), on a parabolic trend, to the middle of 1930 when the weighted average deviation was 10 percent above the base year. (See Table II.) A parabolic trend of the monthly data from 1926 to July 1930 would have carried the deviation to approximately 12 percent by 1935. Actually, after the large dispersion which occurred during the years from 1930 through 1934 had been dissipated, the amount of the dispersion leveled off at approximately 12 percent, although it dropped a little in 1936. This trend seems to indicate that the dispersion calculated from fixed-base relatives increases very rapidly during the first 3 or 4 years following the base period and increases relatively little thereafter.

Previous investigations - including those of Wesley C. Mitchell, F. Y. Edgeworth, and Norman Crump - tended to show that the dispersion of price relatives increases with a ris-

ing price level and that the degree of dispersion declines with falling prices. The present study indicates that the relative direction of the price level is not nearly so influential on the magnitude of the dispersion as was the rate of change of the price level regardless of its direction. In recent years, excellent examples of this phenomenon were afforded by the rapid change in the price level from 1929 to 1932 and from 1937 to 1938. In both instances the increase in dispersion was caused by the relatively large declines in prices of certain commodities (principally the raw materials), and relatively small declines in prices of other commodities (particularly finished goods).

The irregular price declines from 1929 and 1930 to 1933 resulted in a very large dispersion. During the recovery from 1933 to 1934, the price level went up rapidly and the index of dispersion declined. But the dispersion decline was directly proportionate to the decrease in the spread between raw materials and finished goods prices. It was this ability of the competitively priced raw materials to gain on the more rigid and slower-moving finished goods prices which resulted in the drop in the dispersion index.

During the period from the middle of 1934 to the middle of 1936, prices in general seemed to move moderately upward together. This was indicated by the slight change which occurred in the index of dispersion during that period of advances in industrial production.

The large increase in dispersion which characterized the rapid change among price relationships from the fall of 1936 to the spring of 1937 was the result of a surge in most commodity prices at that time. In general, it was the reflection of the very large increases in the prices of the flexible commodities and the relatively sluggish reaction in the prices of finished goods. The period from April 1937 to the present, however, presents a somewhat different picture. During this period there was an increase in price dispersion caused by drastic reductions in the prices of flexible commodities and the relative maintenance of the prices of other items.

On the advance or on the decline of prices, the changes in the dispersion were the result of large fluctuations in flexible prices, particularly of raw materials. Whether or not the dispersion increased or decreased was dependent, of course, upon the position of the price indexes of these commodities relative to the index of all commodities. If the indexes for these prices were below the all-commodities index, then any increase, violent or moderate, tended to lower the dispersion; if the price indexes for these commodities were above the all-commodities index, a price rise would increase the dispersion.

The following paragraphs describe in more detail the changes in the dispersion during the major changes in the price level from 1929 to date.

Analysis of the Dispersion

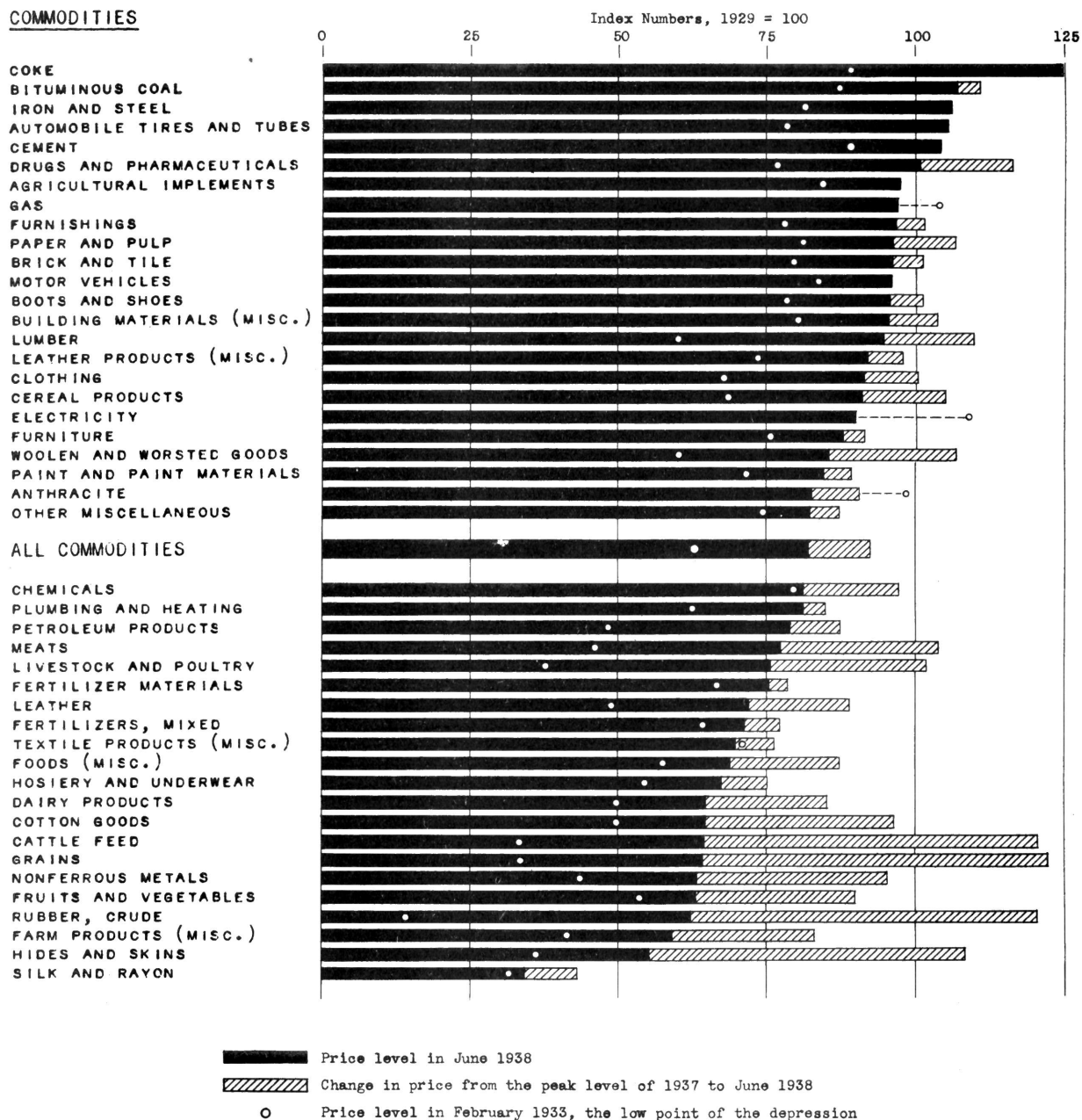
The major characteristics of the decline from 1929 to 1933 are well known. Raw materials and other sensitive commodities dropped precipitously during this period. (See Chart III.) On the other hand, there was a very large group of commodities, chiefly the finished goods items, whose prices went down very little. Previous price relationships were rapidly destroyed. Throughout 1930, 1931, and part of 1932 the index of dispersion - 1929=100 (see Chart I) increased steadily until in June 1932 it was 277. During this period from 1929 to July 1932, the index of production declined to a point which was 49 percent of its 1929 level.^{1/} A slight improvement in the price situation occurred during the summer and the dispersion index then dropped until it was 237 in September 1932. At the same time, business activity improved and the production index advanced to 56 in October 1932. But the price structure became further distorted when the prices of the flexible commodities dropped rapidly in the fall of 1932 and the first 2 months of 1933 so that the dispersion index increased to 305 in February. The index of production had dropped to 50 by March 1933.

By February 1933 the price index for all commodities had reached a point which was 63 percent of its 1929 level. Raw materials and finished goods stood at 50 and 70 percent, re-

^{1/}The Federal Reserve seasonally adjusted index of industrial production, 1923-25=100, has been converted to 1929=100 for use in this study.

CHART III RELATIVE WHOLESALE PRICE LEVELS IN FEBRUARY 1933, PEAK IN 1937, AND JUNE 1938

(SUBGROUPS OF COMMODITIES RANKED ACCORDING TO INDICES FOR JUNE 1938)



Source: Computed from data furnished by the Bureau of Labor Statistics.

spectively, of their 1929 prices. In other words, the composite wholesale price level had declined 37 percent, raw materials 50 percent, and finished goods only 30 percent.

Below are shown two lists of important commodities. One is a tabulation of the items which declined relatively little (less than 20 percent) during the major depression; the other is composed of the flexible commodities whose prices were volatile (dropping more than 50 percent). The rigid classification represents 27 percent and the flexible group 39 percent of the Bureau of Labor Statistics "all-commodities" index.^{1/}

Relatively rigid ^{1/}	Percent change from 1929 to February 1933	Relatively flexible ^{1/}	Percent change from 1929 to February 1933
Electricity ^{2/}	+ 8.9	Rubber, crude	-85.6
Gas ^{2/}	+ 3.8	Silk and rayon	-68.2
Anthracite	- 1.6	Cattle feed	-66.6
Cement	-10.9	Grains	-66.4
Coke	-11.1	Hides and skins	-63.7
Bituminous coal	-13.0	Livestock and poultry	-62.8
Motor vehicles	-14.8	Other farm products	-58.5
Agricultural implements	-15.8	Nonferrous metals	-56.5
Iron and steel	-18.5	Meats	-54.0
Paper and pulp	-18.9	Petroleum products	-51.9
Other building materials	-19.7	Leather	-51.1
Brick and tile	-20.4	Dairy products	-50.4

^{1/}See Chart III.

^{2/}These are average rates based on sliding scales of consumption.

^{1/}These percentages are based on the values of production in 1937.

The average weighted deviation of the 45 subgroup price indexes from their mean index in 1929 was 8.58 percent; by February 1933 the dispersion had increased the average deviation to 26.17 percent (see Table III). This amounted to an increase from 100 to 305 in the index of dispersion. General economic activity, as measured by the index of industrial production, had declined 47 percent during this period (i.e., in February 1933 it was only 53 percent of its 1929 level).

In the early part of 1933, prices began to move upward at a rapid pace, and within a period of a few months much of the disparity between the prices of raw materials and finished products had disappeared. This boom was short-lived and it was followed by a general recession in economic activity and prices during the fall of 1933. The index of dispersion increased slightly. In 1934, however, the recovery became more positive and the upward movement of prices assumed a steadier pace. Prices recovered rapidly and the dispersion was decreased to an index of 131 in February 1935. Production also increased substantially, the index increasing to 77 in January 1935 for a gain of 54 percent.

Prices in general moved together in a moderately upward direction during 1935 and the first half of 1936. There were no violent price changes, although the gap between the prices of raw materials and finished goods became narrower. The index of dispersion showed very little net change, dropping from 131 in February 1935 to 126 in May 1936.

It may be argued that this relative stability had a stimulating effect on all types of economic activity. Production, employment, and profits increased. The volume of production rose by 33 percent during 1935 and 1936. The dispersion among prices was further diminished in the fall of 1936 when farm prices advanced rapidly; in November the index was only 1.4 percent above its 1929 level. In December 1936 production reached a peak which was 1.7 percent in excess of its 1929 volume.

But the relative balance in the price structure did not endure. In the summer of 1936 prices of farm products began to move rapidly upward; in the fall of that year the index of farm prices exceeded the index representing the price level of other commodities. The nonferrous metals also increased rapidly, led by copper which reached a very high level. Steel increased in October 1936 and again in the spring of 1937, and building materials, led by lumber, advanced rapidly. The general price level increased 12 percent from its low point in 1936 to its high point in 1937. A few of the specific groups of commodities showed enormous increases; thus, grains advanced 69 percent, crude rubber 71 percent, meats 34 percent, nonferrous metals 45 percent, and cattle feed 116 percent.

By 1937 more than 50 percent of all commodities, according to value, had advanced to levels which were higher than their 1929 prices. The list of these commodities, in order

of their importance, showing the amount by which they exceeded their 1929 levels, is given below.

Commodity	Percent	Commodity	Percent
Meats	3.9	Boots and shoes	1.2
Iron and steel	5.3	Furnishings	1.5
Livestock and poultry	2.0	Woolen & worsted goods	6.9
Cereal products	4.9	Other bldg. materials	3.7
Bituminous coal	10.7	Coke	24.7
Grains	22.4	Cement	4.0
Clothing	.1	Cattle feed	20.7
Paper and pulp	6.9	Hides and skins	8.3
Auto tires and tubes	5.3	Brick and tile	1.3
Lumber	9.8	Rubber, crude	20.3
		Drugs & pharmaceuticals	16.1

As in all other periods of volatile upward price movements, great disparities among prices developed. Some prices advanced very rapidly; others relatively little.

The period was one of speculation and was characterized by the accumulation of large inventories. Prices of flexible commodities, notably raw materials, reached their peak in April 1937. The prices of the more highly fabricated goods continued upward until the summer.

The period extending from the third quarter of 1937 to the last quarter of 1938 is unique with respect to the movement of prices. Prices of the primary commodities declined precipitously from April 1937 to the early months of 1938. On the other hand, the prices of fabricated goods were maintained at relatively high levels.

Heavy inventories had the normally expected effect on prices of competitive commodities. This is evidenced by the fact that cotton goods, grains, nonferrous metals, hides and skins, and many other commodities declined 34 percent on the average from 1937 to June 1938 (see Chart III). The drop in the general wholesale price level was 11 percent.

Inflexible prices, on the other hand, remained at approximately their 1937 peak levels. The commodities exhibiting the extremes of rigidity and flexibility and their respective price changes during the recent recession, from the 1937 peak to June 1938 are tabulated below.

Relatively rigid ^{1/}	Percent change from 1937 peak to June 1938	Relatively flexible	Percent ^{1/} change from 1937 peak to June 1938
Gas ^{2/}	+7.4	Hides and skins	-49.0
Electricity ^{2/}	+2.3	Rubber, crude	-48.3
Iron and steel	+1.0	Grains	-47.4
Motor vehicles	+ .4	Cattle feed	-46.6
Agricultural implements	.0	Nonferrous metals	-33.5
Cement	.0	Cotton goods	-32.8
Automobile tires & tubes	.0	Fruits and vegetables	-29.7
Coke	- .2	Other farm products	-28.8
Bituminous coal	-3.6	Livestock & poultry	-25.9
Plumbing and heating	-4.2	Meats	-25.5
Brick and tile	-5.1	Dairy products	-24.1
Anthracite	-8.7	Other foods	-21.2

^{1/}See Chart III.

^{2/}These are average rates based on sliding scales of consumption.

The rigid group constitutes 27 percent, and the flexible group 39 percent, of the total weight of all commodities in the index. With the significance of this contrast in mind, it is not difficult to understand the enormous increase in the index of dispersion to 185 in June 1938.

The maintenance of some prices during the recent recession and the large declines experienced by other important commodities resulted in the formation of disparities within the price structure which are of a magnitude almost equal to those in 1931. The price structure, which in 1936 had achieved a state of good working equilibrium, of satisfactory relationships, is now distorted because some prices are too high and others too low. The rapid unbalancing of the price structure in the early months of 1937 was accompanied in September by a precipitous decline in production and employment. The production index dropped 34 percent from August 1937 to June 1938, when the level of output was only 65 percent of the 1929 volume.

The trends of prices since June 1938 have been very erratic, but in general tending toward an improvement in price relationships. The all-commodities index moved slightly upward during the summer as the result of increases in prices of raw materials. In recent months, however, the trend has been downward because of a general weakness throughout the price structure, especially in the finished goods lines. Reductions in prices of finished goods and increases among

the primary commodities have effected a downward fluctuation in the index of dispersion. The peak of the dispersion occurred in June, when the index stood at 185. The improvement in price relationships has resulted in a steady decline until in December the index was 169. The favorable trend is reflected also in the indicator of business activity. The FRB index of industrial production increased to 87 percent of its 1929 level in December 1938.

Judging from past experience, relatively high prices of the finished goods and low prices of the raw materials, principally the grains, still loom as an obstacle to continued recovery. However, the trends are favorable. Continued declines among the finished goods and moderate advances in prices of raw materials should stimulate the recovery movement.

Conclusion

In the foregoing, we have utilized the index of price dispersion as a measure of changes in the relationships among prices. It is not argued here that it is the sole indicator of relative balance or equilibrium within the price structure. The amount of the dispersion does, however, serve as one criterion of the price situation.

Our experience with this measure has been that rapid increases in the dispersion generally are associated with and precede recessions in business activity. An exception to this correlation becomes evident, however, when the price

relatives of the flexible commodities are larger than the index of prices for "all commodities." This was the situation in 1929, when for a few months rapid declines in the prices of flexible items resulted in a reduction in the amount of the average deviation. In that instance, the production index started its downward trend several months in advance of the rapid increase in the dispersion index. Nevertheless, the association between changes in price dispersion and changes in business activity during the last decade has been remarkable.

The present study also has revealed that the dispersion of price relatives increases very rapidly for the first 3 or 4 years following the base year and thereafter the natural changes are very small. However, because of the economic disturbances during the past 10 years it is difficult to measure accurately this trend. We have, therefore, restricted our interpretations of small changes in the relative level of the dispersion. It cannot be assumed that the relationships among prices are any better when the index of dispersion is 100 than it is when the index is 125. The nature of the data and the technique do not lend themselves to such a conclusion. On the other hand, significance can be attached to sharp changes in the index and to the maintenance of the index at a rather constant level. In other words, the direction and the rate of change of the dispersion are the important criteria of price conditions.

TABLE I.- INDEXES OF WHOLESALE PRICE DISPERSION

January 1928 Through December 1938

Months	Y e a r s					
	1928	1929	1930	1931	1932	1933
January	86.1	97.0	99.1	142.8	241.5	290.5
February	79.5	94.4	100.8	150.7	254.7	305.0
March	78.8	108.7	106.8	155.6	252.2	293.3
April	87.1	108.9	107.5	160.5	253.8	283.2
May	93.8	105.5	107.8	175.1	272.5	243.2
June	88.8	102.2	111.0	188.1	277.4	221.7
July	100.1	110.7	112.4	187.8	252.1	208.8
August	105.8	112.0	109.2	188.6	244.4	226.4
September	113.7	107.6	119.9	201.4	237.1	221.7
October	94.8	100.8	123.4	206.3	252.3	231.8
November	88.5	95.0	134.2	208.0	253.8	233.2
December	91.1	97.4	137.2	228.6	281.6	246.4

Months	Y e a r s				
	1934	1935	1936	1937	1938
January	234.4	132.0	139.8	108.3	156.6
February	219.0	131.4	133.2	107.1	166.1
March	215.3	144.5	138.5	121.9	169.5
April	223.3	139.9	132.6	137.9	178.0
May	221.4	140.6	126.3	143.2	182.4
June	201.4	136.5	114.7	145.7	185.0
July	193.4	138.3	106.7	161.0	182.8
August	172.7	150.9	113.4	170.6	182.2
September	154.1	154.5	113.0	170.3	178.7
October	168.5	148.3	105.7	166.3	175.2
November	167.4	132.7	101.4	157.2	168.8
December	166.3	142.0	102.8	155.4	168.8

Source: U. S. Dept. of Labor, Bureau of Labor Statistics, wholesale price indexes (1926 = 100).

Note: The measure of dispersion is the weighted average of the deviations of the 45 commodity subgroup price indexes from the all-commodities index. The indexes were derived by dividing the monthly average deviations by the average deviation in 1929.

TABLE II.- WEIGHTED AVERAGE DEVIATION OF COMMODITY SUBGROUP
PRICE INDEXES FROM THE "ALL COMMODITIES" INDEX

January 1928 Through December 1938

Months	Y e a r s					
	1928	1929	1930	1931	1932	1933
January	7.73	8.71	8.90	12.82	21.69	26.09
February	7.14	8.48	9.05	13.53	22.87	27.39
March	7.08	9.76	9.59	13.97	22.65	26.34
April	7.82	9.78	9.65	14.41	22.79	25.43
May	8.42	9.47	9.68	15.72	24.47	21.84
June	7.97	9.18	9.97	16.89	24.91	19.91
July	8.99	9.94	10.09	16.86	22.64	18.75
August	9.50	10.06	9.81	16.94	21.95	20.33
September	10.21	9.66	10.77	18.09	21.29	19.91
October	8.51	9.05	11.08	18.53	22.66	20.82
November	7.95	8.53	12.05	18.68	23.24	20.94
December	8.18	8.75	12.32	20.53	25.29	22.13

Months	Y e a r s				
	1934	1935	1936	1937	1938
January	21.05	11.85	12.55	9.29	13.44
February	19.67	11.80	11.96	9.19	14.25
March	19.33	12.98	12.44	10.46	14.54
April	20.05	12.56	11.91	11.83	15.27
May	19.88	12.63	11.34	12.29	15.65
June	18.09	12.26	10.30	12.50	15.87
July	17.37	12.42	9.58	13.81	15.68
August	15.51	13.55	10.18	14.64	15.63
September	13.84	13.87	10.15	14.61	15.33
October	15.13	13.23	9.49	14.27	15.03
November	15.03	11.92	9.11	13.49	14.48
December	14.93	12.75	9.23	13.33	14.48

Source: U. S. Dept. of Labor, Bureau of Labor Statistics,
wholesale price indexes (1926 = 100).

TABLE III.- PERCENT DEVIATION OF WHOLESALE PRICE INDEXES FROM THE "ALL-COMMODITIES" INDEX, BY COMMODITY SUBGROUPS

For Selected Dates

Commodity subgroups	Year 1929	Feb. 1933	Nov. 1936	Apr. 1937	June 1938	Dec. 1938
<u>Farm products</u>						
Grains	+2.20	-45.32	+24.88	+35.45	-19.92	-29.35
Livestock and poultry	+11.33	-32.94	-3.28	+6.36	+2.43	-3.38
Other farm products	+11.86	-26.09	+0.61	-5.23	-19.54	-13.64
<u>Foods</u>						
Dairy products	+10.81	-12.37	+7.04	-10.80	-12.52	-4.03
Cereal products	-7.66	+1.00	+4.25	+2.05	+2.43	-2.86
Fruits and vegetables	+2.62	-12.37	-9.22	-5.11	-21.20	-21.56
Meats	+14.48	-16.05	+3.40	+7.84	+7.92	+3.77
Other foods	-1.47	-9.53	-1.21	-12.50	-17.37	-10.13
<u>Hides and leather products</u>						
Boots and shoes	+11.54	+39.30	+20.51	+17.95	+30.01	+30.65
Hides and skins	+18.26	-31.61	+22.82	+37.95	-20.43	+2.34
Leather	+18.78	-7.53	+7.28	+14.43	+4.21	+11.56
Other leather products	+11.65	+30.27	+16.38	+16.25	+24.78	+24.42
<u>Textile products</u>						
Clothing	-5.56	+2.34	-1.09	-1.36	+4.98	+5.97
Cotton goods	+3.67	-17.89	+3.76	+8.07	-18.39	-16.10
Hosiery and underwear	-7.14	-19.23	-25.73	-25.11	-23.76	-22.99
Silk and rayon	-15.63	-57.19	-59.47	-61.59	-64.75	-60.00
Woolen and worsted goods	-7.35	-11.04	+2.31	+6.25	-3.45	-2.86
Other textile products	-2.31	+10.70	-19.30	-21.82	-16.99	-16.36
<u>Fuel and lighting materials</u>						
Anthracite	-5.46	+48.33	0.00	-17.73	-4.85	+4.03
Bituminous coal	-4.20	+32.78	+17.96	+12.05	+24.52	+27.92
Coke	-11.23	+25.75	+18.69	+16.82	+34.48	+35.32
Electricity	-0.84	+72.07	+0.36	-12.39	+11.11	+6.23
Gas	-2.31	+61.54	-0.61	-8.30	+15.45	+9.87
Petroleum products	-25.18	-42.64	-29.49	-32.05	-28.10	-33.90
<u>Metals and metal products</u>						
Agricultural implements	+3.57	+38.96	+12.74	+4.66	+22.73	+21.43
Iron and steel	-0.42	+29.26	+7.89	+13.18	+28.86	+25.71
Motor vehicles	+11.96	+52.01	+11.65	+6.48	+22.61	+21.30
Nonferrous metals	+11.33	-22.74	-8.50	+10.23	-14.18	-0.26
Plumbing and heating	-0.31	-0.67	-6.92	-10.57	-1.40	+2.21

TABLE III.- PERCENT DEVIATION OF WHOLESALE PRICE INDEXES FROM THE "ALL-COMMODITIES" INDEX, BY COMMODITY SUBGROUPS (Cont.)

For Selected Dates

Commodity subgroups	Year 1929	Feb. 1933	Nov. 1936	Apr. 1937	June 1938	Dec. 1938
<u>Building materials</u>						
Brick and tile	-1.05	+25.59	+7.77	+7.84	+15.71	+18.83
Cement	-3.67	+36.79	+15.90	+8.52	+21.97	+24.03
Lumber	-1.57	-5.69	+5.10	+17.05	+13.28	+18.05
Paint and paint materials	-0.42	+13.71	-2.31	-4.66	+2.30	+5.19
Other building materials	+2.52	+31.27	+10.32	+13.52	+19.16	+16.49
<u>Chemicals and drugs</u>						
Chemicals	+3.99	+32.11	+8.25	+7.05	+2.94	+3.90
Drugs and pharmaceuticals	-24.97	-8.36	-5.46	-5.80	-8.17	-4.55
Fertilizer materials	-3.36	+2.84	-17.48	-19.66	-11.24	-10.91
Fertilizers, mixed	+1.99	+4.35	-15.53	-18.18	-11.49	-4.16
<u>Housefurnishing goods</u>						
Furnishings	-1.78	+21.91	+4.00	+4.66	+15.84	+17.27
Furniture	-0.31	+20.23	-4.37	-2.50	+6.64	+5.97
<u>Miscellaneous</u>						
Automobile tires and tubes	-42.81	-28.76	-39.20	-35.91	-26.69	-23.64
Cattle feed	+27.60	-32.11	+52.91	+66.82	+0.13	-0.52
Paper and pulp	-6.72	+20.57	-1.09	+6.70	+9.19	+5.06
Rubber, crude	-55.61	-89.80	-54.98	-43.98	-66.41	-55.97
Other	+3.25	+22.58	-0.85	-3.07	+3.58	+5.32
Weighted average deviation	8.58	26.17	8.70	11.83	15.87	14.48
Index of dispersion	100.00	305.00	101.40	137.90	185.00	168.80

Source: U. S. Dept. of Labor, Bureau of Labor Statistics.

