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Volume Title: *Aspects of Recent Price Movements*

Volume Author/Editor: Frederick C. Mills

Volume Publisher: NBER

Volume URL: <http://www.nber.org/books/mill33-1>

Publication Date: October 1933

Chapter Title: *Aspects of Recent Price Movements*

Chapter Author: Frederick C. Mills

Chapter URL: <http://www.nber.org/chapters/c7579>

Chapter pages in book: (p. 1 - 8)

tion to our knowledge of increase in production which has been made since Mill wrote."

Dr. Burns has been appointed a member of the research staff of the National Bureau to assist Dr. Mitchell on his forthcoming volume on business cycles.

*Strategic Factors in Business Cycles*, by John Maurice Clark; 200 pp., \$1.50.

Professor Clark's report to the Committee on Recent Economic Changes, which the National Bureau is publishing, is in galley proof. Orders are now being filed.

The volume is composed of six Parts:

- I. Theoretical Approach to the Problem
- II. Typical Cycle Patterns
- III. General Movement, 1922-1929
- IV. Special Features of the Last Cycle
- V. Another Approach: Meaning and Requirements of Balance
- VI. The Strategic Factors

There will be an introduction by the Committee on Recent Economic Changes.

#### PUBLICATIONS, 1921-1933

- \*1 INCOME IN THE UNITED STATES  
By WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY and OSWALD W. KNAUTH  
*Volume I* (1921) Summary 152 pp.
- 2 *Volume II* (1922) Details 440 pp.
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# National Bureau of Economic Research

OCTOBER 31, 1933

BULLETIN 48

51 MADISON AVE., NEW YORK

A NON-PROFIT MEMBERSHIP CORPORATION FOR IMPARTIAL STUDIES IN ECONOMIC AND SOCIAL SCIENCE

## ASPECTS OF RECENT PRICE MOVEMENTS

Frederick C. Mills

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### RECESSION AND RECOVERY IN WORLD PRICES

THE PRICE changes occurring in the United States in the last four years are phases of a world-wide movement. The sharp decline that marked the initiation of the price recession was felt in the Orient, the Near East, the Argentine and Western Europe before the spring of 1929 was past. The record of recovery in recent months shows similar geographical diversity. In half a dozen countries prices were lifted above their depression lows during 1932. The first quarter of 1933 added no less than eight countries to those in which price revival had occurred, and a dozen more advances were recorded before another three months were past. By July of 1933 the force of advancing prices had been felt in nearly every important economic area.

The recent check to the rate of price increase in the United States is also reflected in statistics of world price movements. Of 22 countries, 14 showed lower wholesale prices in August than in June or July. A smaller group of seven countries for which September index numbers are available includes four for which prices were lower in September than in some one of the preceding three months.

The downward swing of world prices during the period of recession, the advance of 1933 and the hesitation of the last several months are shown graphically in Figure 1, on the following page, picturing price movements in the United States and in seven European countries. The movements here depicted relate to price changes in terms of national currencies.<sup>1</sup>

For our immediate purpose the outstanding feature of these movements is found in the character of recent changes occurring in the United States. In regard both to degree of advance and persistence of advance, the movement in this country has been notable.

### CHARACTERISTICS OF THE RECENT PRICE REVIVAL IN THE UNITED STATES

In the United States the force of reviving business activity, coupled with departure from the gold standard, brought an advance of 18 per cent in the level of commodity prices, at wholesale, within a period of seven months—a very substantial gain. But the mere record of average advance gives little information about the nature and economic significance of this change. It is recognized that unique forces contributed to the price advance that began in the United States in the early spring of 1933. It is the more interesting, therefore, to inquire whether the resulting movements of prices were of the type commonly found in cyclical revivals, or whether the entire price movement of 1933 has been of a quite exceptional character. Such information has an obvious bearing upon any judgment concerning the nature of this recovery and its probable future course.

One fact that is clearly revealed by a study of the current price movement is that it has been a more compact rise, a rise more generally shared by commodities at large, than is usual in cyclical upturns following business depressions. Such movements are usually slow to get under way. The force of recovery

<sup>1</sup> Certain measurable characteristics of the price changes in these eight countries are summarized in the following table:

Country	Date of high before recession	Decline in terms of national currencies			Decline in terms of gold values			Net change from low to Sept., 1933 (per cent)	
		Degree (per cent)	Duration (months)	Date of low	Degree (per cent)	Duration (months)	Date of low	In terms of national currencies	In terms of gold values
France	Feb., 1929	-42	51	May, 1933	-42	51	May, 1933	+3.1	+3.1
Germany	March, 1929	-35	49	April, 1933	-35	49	April, 1933	+4.3	+4.3
Great Britain	March, 1929	-31	49	April, 1933	-32	54	Sept., 1933	+6.0	..
Italy	March, 1929	-44	54	Sept., 1933	-45	49	April, 1933	..	+1.8
Netherlands	March, 1929	-52	49	April, 1933	-52	49	April, 1933	+4.2	+4.2
Yugoslavia	March, 1929	-43	54	Sept., 1933	-56	54	Sept., 1933	+1.9	+7.2
Austria	May, 1929	-21	45	Feb., 1933	-41	47	April, 1933	+1.9	+7.2
United States	July, 1929	-39	43	Feb., 1933	-49	50	Sept., 1933	+18.4	..

With reference to purely domestic conditions, primary interest attaches to changes in terms of national currencies. Gold values are of major importance in connection with international relations. It is notable that in five of the eight countries here listed wholesale prices in terms of gold values advanced in 1933.

spreads by degrees, with a long lag between the earliest sign of advance and the dissemination of that advance throughout the price system. In this respect periods of revival differ from periods of recession which, typically, are relatively compact movements.<sup>2</sup> But the price rise of 1933 was a concentrated, coherent, upward surge.<sup>3</sup> Here, in place of the slow, cumulative recovery of the usual cyclical revival, we had the concentrated reversal in the direction of price movements and the swift transmission of the stimulus to change which usually characterize price recessions. This particular recovery of prices was not the customary slowly-germinating movement, but a speedy reaction to a changed economic outlook.

In one other respect the upward movement of prices in 1933 was marked by distinctive features. Study of the sequence of recovery in the prices of individual commodities during a number of cyclical revivals reveals evidence of a general pattern, to which price movements during specific cycles conform in greater or less degree.<sup>4</sup> Moreover, the pattern of price revival is not unrelated to the pattern of recession. There is not complete uniformity, of course, but the tendency toward a common sequence of price movements is clearly present. When the sequence of price recovery in 1933 is compared with the standard pattern of revival a degree of conformity less than that usually prevailing is found. So, also, the relationship between the sequence of recession in the prices of individual commodities in 1929 (and the years following) and the sequence of recovery in 1933 is distinctly less marked than that usually found to prevail between recession and succeeding revival. The movements of 1933 show few of those regularities usually found in the cyclical behavior of commodity prices (regularities seldom of a very high order, it is true). It was a price rise stimulated by novel forces and, in its detailed manifestations, differing rather significantly from the usual cyclical revival.

#### PRICE RECESSION AND RECOVERY, IN RELATION TO THE STRUCTURE OF DOMESTIC WHOLESALE PRICES

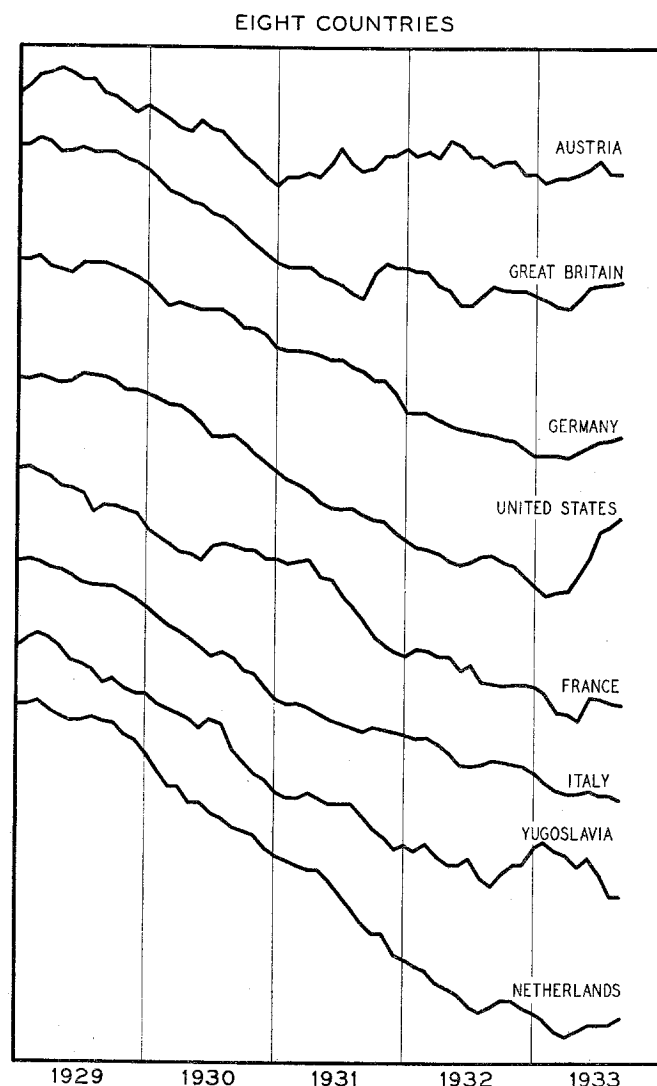
The inequalities that developed among the prices of different types of commodities during the recession that began in 1929 have become notorious. The prices of raw materials fell to unprecedented lows, while the prices of manufactured goods remained relatively

<sup>2</sup> Cf. *The Behavior of Prices* (National Bureau of Economic Research, 1927), pp. 395-403.

<sup>3</sup> Up to and including a date four months after the low point in the general price index (that is, up to June, 1933) approximately 88 per cent of a selected list of 351 commodities, as quoted in wholesale markets, had advanced in price. Over similar periods in ten business revivals occurring between 1892 and 1922 about 61 per cent of this group of commodities have risen in price, on the average.

<sup>4</sup> Cf. *The Behavior of Prices*, p. 135.

FIGURE 1  
ILLUSTRATING THE CHANGES IN WHOLESALE  
PRICE LEVELS IN TERMS OF NATIONAL CURRENCIES,  
JANUARY, 1929, TO SEPTEMBER, 1933



PLOTTED ON RATIO SCALE

high; agricultural products suffered much more severely than did non-agricultural products; goods intended for ultimate consumption declined more severely than did goods intended for use in the construction of capital equipment. Such inequalities, developing over a short period of time, present obvious barriers to a resumption of normal economic activity. The effect of the price advance of 1933 on these inequalities is a matter of considerable interest.

Changes in the relative standing of different groups of commodities, as priced in wholesale markets, are shown in Table 1. These measurements are presented graphically in Figure 2, on page 5.

TABLE 1  
INDEX NUMBERS OF AVERAGE PURCHASING POWER, PER UNIT,  
OF COMMODITIES AT WHOLESALE IN THE UNITED STATES  
1929-1933

Number of price quotations	Commodity group	Selected Commodity Groups <sup>1</sup>				
		Index numbers of per-unit purchasing power				
		July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933
144	Raw materials .....	100	82	91	88	88
516	Manufactured goods .....	100	111	106	107	107
180	Foods .....	100	81	88	85	84
480	Non-foods .....	100	112	108	109	110
74	Products of American farms, raw .....	100	64	82	78	76
586	All other products (including processed farm products) .....	100	111	105	106	107
403	Producers' goods .....	100	96	100	99	99
257	Consumers' goods .....	100	104	100	102	102

<sup>1</sup> Measurements appearing in this table and in following tables are based, unless otherwise noted, upon index numbers constructed by the National Bureau of Economic Research from price quotations compiled by the United States Bureau of Labor Statistics. The index numbers are weighted aggregates of actual prices, with weights based on average quantities produced in 1927 and 1931. The original price index numbers are given in the Appendix Table.

The index numbers here cited define changes in the average per-unit purchasing power, at wholesale, of commodities in the groups named. That is, the changes shown are in all cases changes relative to the wholesale price index.<sup>5</sup> A commodity that rises in price less rapidly than the general average during a period of rising prices or falls more rapidly during a period of declining prices loses in purchasing power, per unit. The reverse is true of a commodity that rises in price more rapidly than the general average during a period of price advance, or falls less rapidly during a period of price decline. It is such shifts in relative position, rather than absolute price changes, which affect the real worth of a commodity (that is, its per-unit purchasing power, in terms of other commodities).

The movements here shown are measured with reference to July, 1929, as base. Between that month and the low point of the price recession in February, 1933, raw materials lost 18 per cent in real worth (or purchasing power), per unit, while manufactured goods gained 11 per cent.<sup>6</sup> Foods lost 19 per cent, non-foods gained 12 per cent. Most striking were the changes affecting raw farm products and 'all other products', the former group losing no less than 36 per cent in real worth, per unit, the latter gaining 11 per cent. Producers' goods (that is, raw materials or other goods which must undergo further changes in form before being ready for consumption, or which are intended for use in the construction of capital

<sup>5</sup> An index of average purchasing power of commodities in a given group is constructed by dividing the price index of that group by the index of general wholesale prices, both index numbers being on the same base.

<sup>6</sup> The actual price index numbers for these two groups in February, 1933, on the July, 1929, base, were 51 for raw materials, 69 for manufactured goods. Dividing these two index numbers by 62, the price index for all commodities, at wholesale, in February, 1933, we derive the index numbers given in the table.

equipment) lost 4 per cent in per-unit worth, while goods in shape for final consumption gained 4 per cent. These are some of the divergencies which developed in the course of the recession in prices and production, and which represented barriers to the free exchange of goods.

How have the changes of the last seven months affected these relations? It is clear, from the entries in Table 1, that between February and July of 1933 there was a notable lessening of the gaps which had been opened up during the period of price recession. The two broad classes of producers' and of consumers' goods, indeed, stood in July, 1933, in the same general relationship as in July, 1929. The price disparity between raw materials and manufactured goods, and that between raw farm products and all other commodities, had been cut in half during this five-month period. The reduction of price discrepancies between foods and non-foods was somewhat less, but a substantial improvement had occurred.

The movements of the last two months, however, constituted a reversal of the tendencies prevailing between February and July. Among the three divisions which show definite cleavages the disparities prevailing in September were wider than those of July. Raw materials, which had risen to within 9 per cent of their pre-recession parity with manufactured goods, dropped to a point 12 per cent below that standard. Foods and raw farm products lost more heavily, falling well below the July high points of real worth, per unit of product.

These shifts call for somewhat more careful consideration. For it is of cardinal importance, in an appraisal of the current price situation, to know whether the net changes occurring since last February reflect the pressure of forces which have persisted during the entire period, or whether they are the net resultants

TABLE 2

INDEX NUMBERS AND MEASUREMENTS OF RATES OF CHANGE IN WHOLESALE PRICES  
FROM FEBRUARY, 1933, TO SEPTEMBER, 1933

Commodity group	Index numbers of wholesale prices				Percentage changes in wholesale prices, 1933 <sup>1</sup>							
	July 1929	Feb. 1933	July 1933	Sept. 1933	Feb. to Sept.	Feb. to March	March to April	April to May	May to June	June to July	July to Aug.	Aug. to Sept.
All commodities <sup>2</sup>	100.0	61.7	72.3	74.4	+20.6	+0.8	+0.7	+4.2	+4.1	+6.4	+1.4	+1.4
Raw materials	100.0	50.6	65.5	65.6	+29.6	+2.4	+1.4	+7.4	+5.8	+9.7	-1.2	+1.4
Manufactured goods	100.0	68.6	76.5	79.8	+16.3	0.0	+0.5	+2.6	+3.3	+4.8	+2.8	+1.5
Foods	100.0	50.0	63.6	62.2	+24.5	+2.4	+2.9	+7.1	+3.5	+9.1	-1.9	-0.5
Non-foods	100.0	69.1	77.8	82.2	+18.8	0.0	-0.3	+2.8	+4.4	+5.2	+3.0	+2.4
Products of American farms, raw	100.0	39.5	59.4	56.5	+42.9	+5.0	+3.9	+14.5	+7.3	+12.2	-3.5	-1.5
All other products	100.0	68.2	76.1	79.6	+16.7	0.0	+0.2	+2.3	+3.4	+5.3	+2.4	+2.2
Producers' goods	100.0	59.5	72.1	73.4	+23.4	+1.6	+0.9	+5.8	+4.4	+7.1	+0.4	+1.3
Consumers' goods	100.0	64.4	72.7	75.7	+17.5	+0.2	+0.3	+2.6	+3.7	+5.6	+2.6	+1.5

<sup>1</sup> See the Appendix Table for price index numbers for all the dates here recorded.

<sup>2</sup> These index numbers for all commodities differ slightly from those cited in the text above, and in Tables 5 and 6, which have been constructed by the United States Bureau of Labor Statistics. Somewhat different weighting systems are used in constructing the index numbers of the National Bureau of Economic Research and of the United States Bureau of Labor Statistics.

of conflicting tendencies. Table 2, showing month-to-month movements of prices in these several groups, as well as net changes, bears on this question. The measurements here given relate to actual prices, not to purchasing power.

The retardation of the rate of advance in the general wholesale price index between July and September, after three months of very rapid rise, has already been noted. The measurements for the sub-groups show clearly the nature of the reversal of the tendencies which had prevailed during the five months preceding. During each of the five months from February to July raw materials, raw farm products and producers' goods rose at rates more rapid than those prevailing among their complementary groups. With the exception of but one month the same is true of foods. That is, the upward push of revival was felt most immediately and forcefully by the commodity groups most severely de-

pressed in price. But from July to August and from August to September the precise reverse was true. Those groups which had previously advanced most rapidly in price declined, or rose but slightly, while the groups which had been most successful in resisting the price recession of the preceding years, and which had previously lagged on recovery, spurted ahead. This apparent shift in the incidence of price recovery took place in each of the four commodity divisions shown in Table 2.

#### RECESSION AND RECOVERY AMONG PRODUCERS' AND CONSUMERS' GOODS

A study of broad categories may fail to reveal extremely divergent movements among the prices of commodities in subordinate groups. It is desirable, in particular, that we follow the changes occurring among different classes of producers' and consumers' goods.

TABLE 3

INDEX NUMBERS OF AVERAGE PURCHASING POWER, PER UNIT,  
OF COMMODITIES AT WHOLESALE IN THE UNITED STATES  
1929-1933

No. of price quotations	Classes of Producers' and of Consumers' Goods					No. of price quotations	Classes of Producers' and of Consumers' Goods						
	July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933		July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933		
403	All producers' goods	100	96	100	99	99	257	All consumers' goods	100	104	100	102	102
114	Raw	100	80	89	86	87	30	Raw	100	90	96	94	92
289	Processed	100	116	111	112	111	227	Processed	100	108	102	103	104
184	Intended for human consumption	100	74	89	87	86							
103	Intended for use in capital equipment	100	118	108	107	107							
103	Intended for use as bldg. materials	100	123	116	117	117							
184	Producers' goods intended for human consumption	100	74	89	87	86	227	Consumers' goods, processed	100	108	102	103	104
55	Foods	100	65	82	77	75	95	Foods	100	96	92	90	90
129	Non-foods	100	83	97	97	97	132	Non-foods	100	119	110	115	117

Measurements appear in Table 3. They are shown graphically in Figure 2.

It is clear that the index for all producers' goods, which shows a loss of but 4 per cent in real worth, per unit, between July, 1929, and February, 1933, does in fact conceal some highly divergent movements among different classes of such goods. Raw producers' goods lost 20 per cent of their per-unit worth during this period of recession, while processed producers' goods gained 16 per cent in real worth per unit. The general recovery of raw material prices which began in March, 1933, helped to lessen this disparity.

More notable, however, are the differences revealed by the second set of figures in the producers' goods group. Producers' goods intended (after further fabrication) for direct human consumption lost 26 per cent in average per-unit purchasing power during the period of declining prices that ended in February, 1933. This great decline, coupled with the tardiness of changes in the prices of other producers' goods, brought substantial increases in the worth of such other goods, in exchange for commodities in general. Commodities intended for use in capital equipment (other than building materials) rose 18 per cent in per-unit purchasing power, between July, 1929, and February, 1933, while goods intended for use as building materials rose no less than 23 per cent. This means that the power of producers of other goods to buy building materials and articles of capital equipment was substantially reduced during the depression. The high prices of such equipment served as a strong barrier to the initiation of programs of capital extension. (Other factors, of course, worked in the same direction during this period.)<sup>7</sup>

But here, also, the recovery of the spring and summer wrought great changes. The first effect of price recovery was definitely correctional, in that price disparities developing during the recession were sharply reduced. Within five months a loss of 26 per cent in the relative worth of a unit of producers' goods intended for human consumption, after fabrication, was reduced to 11 per cent. Over the same period the gain in per-unit worth of goods entering into capital equipment was reduced from 18 to 8 per cent. Building materials were reduced also, in purchasing power, but by a smaller amount. Between July and September the tendency toward pre-recession price relations among different classes of producers' goods was checked, and in some instances reversed. Raw pro-

<sup>7</sup> These statements apply to the cost of new capital equipment at depression prices. Another major obstacle to normal activity has been created by the wide divergence between the original costs of existing capital equipment and the current selling prices of manufactured goods. High overhead costs, due to capital investment at high pre-depression prices, have rendered profitable operation at existing price levels difficult. This problem and other questions relating to the liquidation of pre-recession capital values are not here discussed.

ducers' goods and producers' goods intended for ultimate human consumption lost some of their earlier gains; building materials, already high in per-unit worth, advanced fractionally. But goods intended for use in capital equipment, which were also relatively high-priced, declined slightly in real value.

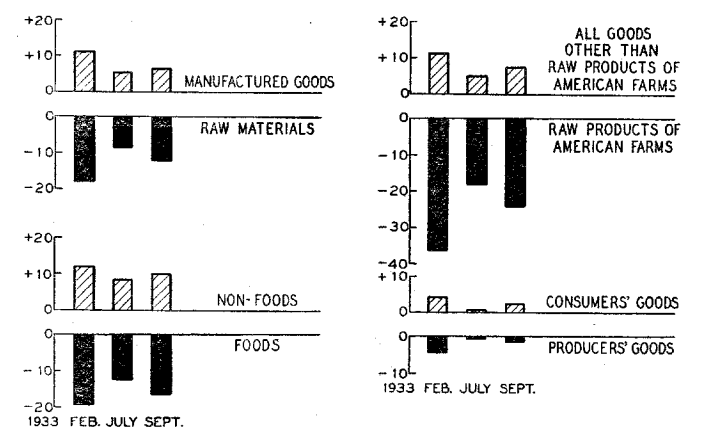
Among goods ready for consumption the gap between raw and processed categories was less pronounced than among producers' goods, but it was still

FIGURE 2

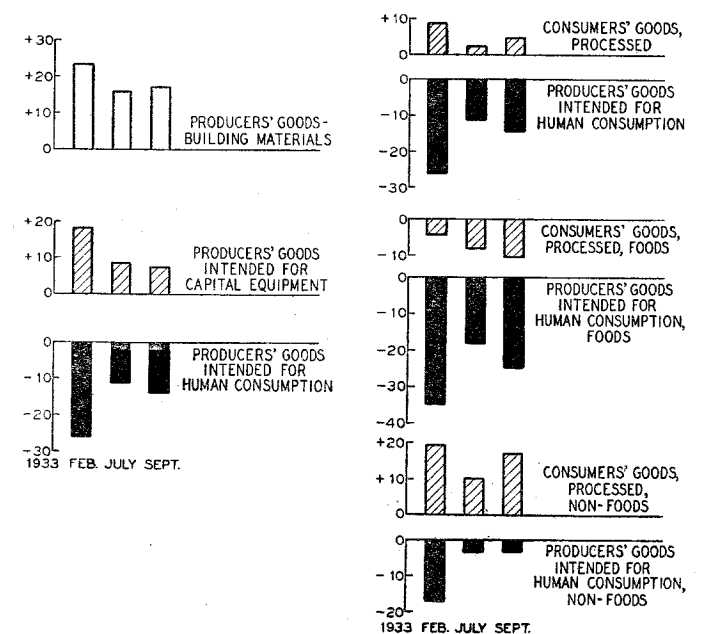
GRAPHIC REPRESENTATION OF CHANGES IN THE REAL VALUES, PER UNIT, OF COMMODITIES IN SELECTED GROUPS,  
JULY, 1929, TO SEPTEMBER, 1933

(CHANGES ARE MEASURED AS PERCENTAGE DEVIATIONS FROM JULY, 1929,  
PARITY WITH GENERAL WHOLESALE PRICES)

#### A. MAJOR GROUPS



#### B. CLASSES OF PRODUCERS' AND OF CONSUMERS' GOODS



wide, at the low point of the depression. This gap was very greatly reduced by the recovery, up to July, but was opened again by the price movements occurring between July and September.

One of the most interesting comparisons to be drawn from these figures is that between producers' goods intended for human consumption, after fabrication, and processed consumers' goods. These two groups are representative of the same general class of commodities at successive stages of fabrication and distribution (though precisely the same commodities, at successive stages, are not included in the two groups). At the producers' goods stage, as we have seen, there was a drop of 26 per cent in per-unit purchasing power between July, 1929, and February, 1933; at the consumers' goods stage there was an advance of 8 per cent. (In terms of actual prices, these shifts were due to a drop of 54 per cent in the average wholesale price of producers' goods intended for human consumption, a decline of 33 per cent in the average wholesale price of processed consumers' goods. The average price of all commodities fell 38 per cent.) Here was a notable widening of the price differential representing the cost of the services of fabricators and distributors, a development with important economic consequences. For the drop in the prices of goods bought by producers for fabrication lessens the income and curtails the purchasing power of the sellers of these goods. The drop in the incomes of consumers, and the failure of the prices of finished consumption goods to decline correspondingly, check the flow of goods to final consumers. This particular discrepancy reflected a serious disruption of the normal processes of buying and selling and contributed to a substantial reduction in the volume of trade and consumption.

This major disparity was materially reduced between February and July. Consumption goods awaiting fabrication were lifted to within 11 per cent of

their pre-recession parity with all commodities, while finished consumers' goods were reduced to within 2 per cent of that parity. The correctional push of price recovery was nowhere so clearly evident as here. But here also, from July to September, the gap was widened again. Reference to the figures for foods and non-foods, within each of these main categories, reveals a striking recent drop in the real worth of food products, at the producers' goods stage, and an equally striking advance of non-foods, at the consumers' goods stage. It is these two movements, predominantly, which have opened a wider gap between the two major groups in the months just past.

For these groups, also, we may trace month-to-month changes in actual prices. The shifting incidence of the stimulus to price recovery is best revealed by such measurements. These appear in Table 4.

Here again we find it to be generally true that the first stimulus to price recovery was felt among the most severely depressed classes of goods, and that the upward pressure was maintained among such goods through the month of July. Thereafter there occurred the shift already noted. Those goods which had lagged behind up to that point—processed producers' goods, processed consumers' goods, building materials—began to pick up. The contrast is not so clearly drawn as in the case of the major divisions of goods first discussed, but it is there. In the main, the price advance from July to September was led by goods already high-priced, whereas the advance from February to July was predominantly due to increases among low-priced elements of the price structure.

#### RECENT MOVEMENTS OF GENERAL ELEMENTS OF THE PRICE STRUCTURE

For a more complete picture of the current price situation we should trace recent changes beyond the

TABLE 4  
INDEX NUMBERS AND MEASUREMENTS OF RATES OF CHANGE IN WHOLESALE PRICES  
FROM FEBRUARY, 1933, TO SEPTEMBER, 1933  
Classes of Producers' and of Consumers' Goods

Commodity group	Index numbers of wholesale prices				Percentage changes in wholesale prices, 1933							
	July 1929	Feb. 1933	July 1933	Sept. 1933	Feb. to Sept.	Feb. to March	March to April	April to May	May to June	June to July	July to Aug.	Aug. to Sept.
Producers' goods	100.0	59.5	72.1	73.4	+23.4	+1.6	+0.9	+5.8	+4.4	+7.1	+0.4	+1.3
Raw	100.0	49.1	64.6	65.0	+32.2	+3.1	+2.0	+8.9	+5.4	+8.8	-1.7	+2.4
Processed	100.0	71.4	80.5	82.8	+15.9	-0.1	+0.5	+2.7	+3.6	+5.6	+2.4	+0.4
For human consumption	100.0	45.8	64.6	64.3	+40.3	+4.0	+2.5	+12.0	+6.6	+10.7	-0.8	+0.3
For capital equipment	100.0	73.1	77.8	79.3	+8.6	-1.0	+0.9	+1.2	+2.7	+2.7	+1.0	+0.9
For building materials	100.0	75.9	84.3	86.9	+14.5	+0.5	+0.1	+1.6	+3.6	+4.8	+2.1	+1.0
Consumers' goods	100.0	64.4	72.7	75.7	+17.5	+0.2	+0.3	+2.6	+3.7	+5.6	+2.6	+1.5
Raw	100.0	55.8	69.1	68.1	+22.1	0.0	-0.7	+2.6	+7.5	+13.2	-0.1	-1.3
Processed	100.0	66.5	73.5	77.5	+16.6	+0.2	+0.6	+2.3	+3.0	+4.0	+3.3	+2.2
Producers' goods intended for human consumption												
Foods	100.0	40.2	59.0	55.9	+38.9	+6.9	+4.7	+13.0	+3.2	+12.4	-4.4	-1.0
Non-foods	100.0	51.1	69.8	72.4	+41.7	+1.9	+0.8	+11.3	+9.2	+9.4	+2.3	+1.5
Consumers' goods, processed												
Foods	100.0	59.0	66.5	66.8	+13.2	+0.7	+2.0	+4.4	+1.3	+3.7	-0.3	+0.8
Non-foods	100.0	73.2	79.9	87.2	+19.1	-0.3	-0.4	+1.0	+4.2	+4.4	+5.7	+3.3

TABLE 5  
INDEX NUMBERS OF CHANGES IN VARIOUS ELEMENTS OF THE  
PRICE STRUCTURE OF THE UNITED STATES, AND IN  
RELATED FACTORS, JULY, 1929, TO SEPTEMBER, 1933

Economic element <sup>1</sup>	Index numbers				
	July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933
Wholesale prices	100.0	62.0	71.4	72.0	73.3
Cost of living of industrial workers	100.0	72.1	75.2	76.9	77.9
Retail food prices	100.0	57.2	66.0	67.3	67.3
Retail prices of clothing and house-furnishings	100.0*	59.0	64.3	67.9	72.5
Prices received by farmers	100.0	35.0	54.3	51.4	50.0
Prices paid by farmers	100.0	66.4	70.4	73.7	76.3
Average per-unit purchasing power of farm products <sup>2</sup>	100.0	53.3	77.2	69.6	65.2
Hourly earnings, employed manufacturing labor	100.0	79.0	77.5	84.7	—
Per capita earnings, employed manufacturing labor	100.0	65.2	69.9	73.3	72.9†
Real per capita earnings, employed manufacturing labor <sup>3</sup>	100.0	90.4	93.0	95.3	93.6†

\* October, 1929.

† Estimated.

<sup>1</sup> The index numbers of wholesale prices and retail food prices are those of the United States Bureau of Labor Statistics. The indexes of cost of living and hourly earnings have been compiled by the National Industrial Conference Board. The indexes of retail prices of clothing and house-furnishings are those computed by Fairchild Publications from prices reported by 36 leading retail organizations. The index numbers of farm prices and of prices paid by farmers are compiled by the U. S. Department of Agriculture from prices received by farmers for their crops and animal products and from prices paid for commodities used in production and family maintenance. The index of per capita earnings for manufacturing labor has been secured by dividing the Federal Reserve Board's index of factory payrolls by their comparable index of employment. The change in per capita earnings from August to September, 1933, has been estimated from data published by the Bureau of Labor Statistics.

<sup>2</sup> Ratio of index of average prices received by farmers to index of average prices paid by farmers for commodities used in production and in family maintenance.

<sup>3</sup> Ratio of index of average weekly earnings of manufacturing employees to index of cost of living of industrial workers.

field of wholesale prices. Some relevant measurements appear in Table 5.

All elements of the price system suffered in the disastrous drop that began in 1929. Here, again, we find diversity of fortunes. A drop of 38 per cent in wholesale prices between July, 1929, and February, 1933, occurred concurrently with declines of 28 per cent in the general cost of living, of 43 per cent in retail food prices, of 41 per cent in department store and mail order prices of clothing and house-furnishings, of

65 per cent in prices received by farmers, and of 34 per cent in prices paid by farmers. In the field of earnings, which lies outside the system of commodity prices proper, there occurred a decline of 21 per cent in the average hourly earnings of manufacturing labor, a drop of 35 per cent in the per-capita earnings of labor employed in manufacturing plants.<sup>3</sup> (These figures re-

<sup>3</sup> The latter index, of course, defines a change in a sum, not in a price or rate, and is not strictly comparable to the other measurements cited.

TABLE 6  
MEASUREMENTS OF RATES OF CHANGE IN VARIOUS ELEMENTS OF THE  
PRICE STRUCTURE OF THE UNITED STATES, AND IN RELATED  
FACTORS, FEBRUARY, 1933, TO SEPTEMBER, 1933

Economic element	Percentage changes, 1933							
	Feb. to Sept.	Feb. to March	March to April	April to May	May to June	June to July	July to Aug.	Aug. to Sept.
Wholesale prices	+18.4	+0.7	+0.3	+3.8	+3.7	+6.0	+0.9	+1.9
Cost of living of industrial workers	+8.0	-0.4	-0.4	+0.8	+1.0	+3.3	+2.3	+1.3
Retail food prices	+17.6	0.0	-1.1	+4.4	+3.2	+8.2	+1.9	0.0
Retail prices of clothing and house-furnishings	+22.9	-0.3	-0.4	+1.4	+2.7	+5.3	+8.4	+4.2
Prices received by farmers	+42.9	+2.0	+6.0	+17.0	+3.2	+18.8	-5.3	-2.8
Prices paid by farmers	+14.9	-1.0	+1.0	+1.0	+1.0	+3.9	+4.7	+3.6
Average per-unit purchasing power of farm products	+22.4	+2.0	+4.0	+17.3	+1.6	+14.5	-9.9	-6.3
Hourly earnings, employed manufacturing labor	...	-0.9	0.0	-1.5	-0.2	+0.7	+9.2	...
Per capita earnings, employed manufacturing labor	+11.8	-3.7	+2.6	+4.8	+3.0	+0.4	+4.8	-0.6*
Real per capita earnings, employed manufacturing labor	+3.5	-3.3	+3.0	+4.0	+2.0	-2.8	+2.4	-1.8*

\* Estimated.



late to the average earnings of *employed* labor. They do not include the great losses in the aggregate earnings of labor resulting from unemployment.)

The changes taking place between February and July served definitely to lessen disparities among the economic elements listed. These changes may be followed most readily on Table 6, which shows the varying rates of change, month by month, among these several economic elements.

During the first five months of price recovery the more rapid advances occurred among the more depressed elements—prices received by farmers, retail food prices, wholesale prices. A decline occurred in the average hourly earnings of manufacturing labor. Between July and September there was not the general reversal of tendencies that occurred among wholesale price groups, but something similar took place. Of the three seriously depressed price groups which had risen most rapidly up to July, one (prices received by farmers) declined, while two (retail food prices and general wholesale prices) advanced at much lower rates. Foods, in fact, were unchanged between August and September. Retail prices of clothing and house-furnishings and prices paid by farmers jumped sharply upward. Perhaps most striking was the rapid advance in the average hourly earnings of manufacturing employees, an advance of no less than 9 per cent in the single month from July to August. Here, of course, the influence of newly established codes is evident.

These records do not permit a complete appraisal of the changes occurring in all parts of the price system. It is clear that the movements of the last two months have adversely affected the correctional tendencies prevailing among farm prices and the prices paid by farmers. The rise in general living costs through August was not sufficient to offset advancing hourly and per capita earnings. Between August and September, however, average per capita earnings of manufacturing employees declined, while living costs continued

to advance. The very rapid climb of retail prices of clothing and house-furnishings in August and September and the relatively rapid rise of retail food prices through August point to the clear possibility of an accentuated advance in general living costs in the near future.<sup>9</sup>

#### RECENT PRICE MOVEMENTS VIEWED AGAINST A PRE-WAR STANDARD

The use of July, 1929, as a standard of reference in price comparisons seems to involve the assumption that the relations then prevailing were 'normal.' This is, of course, far from being the case. There is no one normal system of relations among commodity prices which must prevail if the economic system is to function smoothly. The use of the 1929 standard as a provisional criterion may be justified on the ground that pre-recession relations had existed for some time, dur-

<sup>9</sup> The considerable increases that occurred between February and September in retail food prices and in retail prices of clothing and house-furnishings, increases of the same order of magnitude as the advance in wholesale prices, constitute somewhat novel elements in a recovery situation. The traditional tendency of retail prices to lag well behind wholesale prices, and to fluctuate much less widely, is not here exemplified. Indeed, the preceding price declines in these two groups exceeded the average decline in wholesale prices. However, neither of these index numbers can be taken to represent general prices at retail, which have undoubtedly been more sluggish than these measurements would indicate. One relates to foods alone, one to clothing and house-furnishings as priced in 36 retail organizations conducting large department and specialty stores and mail order businesses. But it is probably true, however, that the traditional sluggishness of retail prices has been considerably reduced during the present depression. Wide price shifts break down old pricing standards, and cause dealers to follow more flexible policies in fixing and changing prices. Again, the growth of chain stores and the increasing scope of large department stores have placed in positions of greater dominance, in retail trade, men who are alertly aware of general business changes, and who are quick to adjust their prices to changes in general market conditions.

TABLE 7  
CHANGES IN PRICES AND RELATED ELEMENTS  
WITH REFERENCE TO A PRE-WAR STANDARD

Economic element <sup>1</sup>	1913	1919	1921	July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933
Wholesale prices .....	100	199	140	138	86	99	100	101
Cost of living of industrial workers.....	100	182	182	172	127	132	135	137
Retail food prices .....	100	186	153	159	91	105	107	107
Prices received by farmers .....	100	209	116	140	49	76	72	70
Prices paid by farmers.....	100	198	149	152	100	106	111	115
Average per-unit purchasing power of farm products.....	100	106	78	92	49	72	65	61
Hourly earnings, employed manufacturing labor.....	100*	.....	213	235	186	182	199	.....
Per capita earnings, employed manufacturing labor.....	100	201	204	202	142	152	159	158†
Real per capita earnings, employed manufacturing labor.....	100	110	112	117	112	115	118	115†

\* July, 1914 = 100.

† Estimated.

<sup>1</sup> The index of wholesale prices is that of the U. S. Bureau of Labor Statistics shifted to the 1913 base. The index of cost of living has been secured by splicing the monthly index of the National Industrial Conference Board to the semi-annual index of the U. S. Bureau of Labor Statistics. The index of per capita earnings for manufacturing labor has been secured by splicing the index cited in Table 5 to an index, on 1914 as 100, similarly derived from data on wages and employment compiled by the Census of Manufactures. Adjustment to the 1913 base has been made through the use of Douglas' index of average annual earnings of manufacturing wage earners. Other sources are given in Table 5.

ing which a relatively efficient basis of economic activity had prevailed, and during which living standards were relatively high. We shall do well, however, to survey recent changes with reference to a pre-war standard, as well as to a pre-recession standard. Did the price movements occurring during the recession, or during the subsequent advance, represent returns to pre-war relations, or departures from such relations? Of course we may not assume that pre-war relations are 'normal' under present conditions. Much water has gone under the bridge since 1913. Substantial changes have occurred in costs and in physical marketings. Modifications in price relations would be expected as a result of such changes. 'Price disparities', with reference to such a distant base, are far less likely to represent economic maladjustments than are discrepancies developing over a brief period of violent change. Nevertheless, a knowledge of pre-war relations, and of the degree to which present relations depart from them, is relevant to a judgment of the existing situation.

We may consider first certain general elements of the price structure, with related measurements of the earnings of manufacturing labor. The figures appear in Table 7.

The situation in July, 1929, before the recession set in, reveals notable alterations in price relations, as compared with the 1913 situation. Retail food prices had advanced more than general wholesale prices, and the cost of living stood at a conspicuously higher level. Prices paid by farmers had risen more than had prices received by farmers, so that the average per-unit

<sup>10</sup> An accurate measurement of changes in the average per-unit purchasing power of farm products would take account of changes in the quality of goods purchased by farmers. Quality variations enter to complicate most measurements of changes in commodity prices and in the volume of production, usually in ways too obscure to define accurately. The usual method of measuring changes in the purchasing power of farm products involves the comparison of price changes occurring among two groups of commodities—farm products, and commodities bought by farmers for use in production and in family maintenance. The first of these groups is composed of standard raw materials (wheat, cotton, hogs, cattle, etc.) subject to only minor variations in quality. The second includes a diverse lot of materials, including farm machinery, automobiles, tractors, etc., many of which have been marked by steady improvement in quality with the passing years. It is estimated, for example, that the quality—the productive efficiency—of farm machinery increased 70 per cent between pre-war years and 1932. (Estimate cited in *Index Numbers of Prices Paid by Farmers for Commodities Bought*, U. S. Department of Agriculture, 1933.) Automobiles and tractors have been marked by similar improvements in quality, over the period of their general use. It is obviously erroneous, if long periods of time are involved, to set against the prices of goods of unvarying quality prices of equipment which has improved so substantially in quality, without taking account of quality changes. The above measurements, therefore, certainly overstate the degree of loss occurring between 1913 and post-war years in the purchasing power of farm products.

purchasing power of farm products was some 8 per cent less than in 1913.<sup>10</sup> Both hourly and per-capita earnings of manufacturing labor had risen to more than double the 1913 standard. Rising costs of living absorbed a considerable part of these gains, but real earnings were appreciably higher than before the War.

At the low point of the depression, in February, 1933, this picture had been materially altered. Wholesale prices stood 14 per cent below their 1913 level; the cost of living of industrial wage-earners was 27 per cent above that level. Prices received by farmers were approximately 51 per cent below the 1913 standard, while prices paid by farmers stood just at the 1913 level. Per-capita and hourly earnings of manufacturing labor were well above the 1913 standard. Reduction to real terms through correction for living costs left such earnings higher than they had been in 1913. (We deal here only with the average earnings of *employed* labor in manufacturing industries. Account is not taken of losses in aggregate earnings resulting from unemployment.)

These differences indicate the magnitude of the shifts that had occurred, during the twenty years following 1913, in the relations among major elements of the economic structure. A level of wholesale prices that had more than doubled between 1913 and 1920 had fallen back to a point below its pre-war level. Other elements (except farm prices and retail food prices) had lagged behind on the downward readjustment. As a result the topography of the economic scene had been vastly altered during the rise and subsequent declines. By the winter of 1932-33 there had been no general adaptation to these altered relations.

Changes occurring during the first five months of recovery brought a notable lessening of these disparities. Without attaching undue importance to the pre-war standard, it is a reasonable assumption that the changes of this period tended to restore working economic relations. Conflicting movements, which have already been noted, occurred during August and September.

We turn now to recent changes in the structure of wholesale prices, referred to a pre-war standard. Alterations in the per-unit purchasing power of certain major elements of this structure are defined by the entries in Table 8.

The post-war cheapening of raw materials, and corresponding enhancement of the real worth of manufactured goods, is a matter of common knowledge. Between 1921 and 1929 a slow movement toward pre-war relations had prevailed, though a margin still existed in July, 1929. This had been greatly widened by February, 1933. Subsequent changes, up to July, 1933, raised raw material prices more rapidly than prices of manufactured goods, and thus served to bring their respective values closer to 1913 parity. The reversal of movement in August and September car-

TABLE 8  
INDEX NUMBERS OF AVERAGE PURCHASING POWER, PER UNIT,  
OF COMMODITIES AT WHOLESALE IN THE UNITED STATES  
1913 TO SEPTEMBER, 1933  
Selected Commodity Groups

Commodity group	Index numbers of per-unit purchasing power <sup>1</sup>							
	1913	1919	1921	July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933
All raw materials .....	100	96	83	95	78	86	84	84
Manufactured goods .....	100	101	108	102	114	108	109	110
Foods .....	100	103	90	102	83	90	87	86
Non-foods .....	100	98	106	99	111	106	108	109
Products of American farms, raw.....	100	109	82	102	66	84	80	78
All other products.....	100	98	104	99	110	105	106	107
Producers' goods .....	100	98	95	95	92	95	94	94
Consumers' goods .....	100	102	108	108	112	108	109	109

<sup>1</sup> The index numbers for the period 1913 to 1929 are based on geometric means of relative prices, unweighted, except that prices of important commodities have been represented by more than one series (see *Economic Tendencies*, p. 584). Beginning with 1929 the number of series included was increased from 492 to 660, and the method of averaging was modified. The method now used is explained in the footnote to Table 1.

ried the two sets of index numbers farther apart, leaving the per-unit purchasing power of raw materials, at the last date cited, 16 per cent below the 1913 standard, while manufactured goods had a per-unit purchasing power 10 per cent above that standard. A similar narrowing of the margins between the real per-unit worth of foods and non-foods, of raw farm products and other products, and of producers' and consumers' goods occurred between February and July, and a similar widening between July and September. Most pronounced were the movements affecting the purchasing powers of products of American farms, in raw state, and of 'all other products'. From a position of decided advantage in 1919 raw farm products lost greatly in relative position by 1921. Thereafter there came slow recovery to approximate parity (in wholesale markets) with other products in July, 1929. By February, 1933, raw farm products had lost 34 per cent of their 1913 purchasing power, per unit, while other products had gained 10 per cent. The notable recovery of the next five months, and the reversion thereafter, have already been commented upon. A wide departure from pre-war parity is shown by the September figures.

The evidence of Table 8, then, bears out that of Table 7. So far as one may judge from the standards provided by earlier relations, the first tendency of price recovery in 1933 was definitely to restore more equitable and more economically desirable relations among different elements of the price structure. Movements during August and September were away from these standards. It is most unlikely, of course, that ultimate stability will be attained with relations precisely the same as those of 1929, or those of 1913. But it is probable that relations conducive to general economic activity and to economic welfare today will be closer to those prevailing at these earlier dates than to those existing at the low point of the depression in February, 1933.

One rather striking feature of Table 8 has to do with the relations between producers' goods and consumers' goods. The entries indicate that producers' goods have been undervalued (with reference to 1913 standards) during the entire period since 1921, and that the relations between producers' and consumers' goods in July, 1933, with respect to per-unit purchasing power, were precisely the same as those prevailing in 1921 and in July, 1929. But these two large categories must be broken down, if we are to have an accurate picture of recent price movements. More detailed measurements are given in Table 9.

The low prices of raw producers' goods, it is apparent, kept the purchasing power index for all producers' goods below parity with consumers' goods. Processed producers' goods were relatively high priced following the depression of 1920-21, and were materially advanced in relative worth by the changes occurring between July, 1929, and February, 1933. In the latter month, when raw producers' goods had a per-unit worth 29 per cent lower than in 1913, processed producers' goods stood 14 per cent above that standard. Recent movements have brought these two indexes closer together, but a substantial margin persisted in July, 1933. Consumers' goods, both raw and processed, have remained above the general average of prices since 1921, though their respective positions have been altered by recent movements.

Perhaps most significant of these groupings is that which distinguishes producers' goods intended for human consumption, after fabrication, and goods intended for use in capital equipment. The relatively high value of goods entering into capital equipment and the low value of producers' goods intended for sale to consumers, after fabrication, have been notable features of the entire post-war situation.<sup>11</sup> This has

<sup>11</sup> Cf. *Economic Tendencies in the United States*, published by the National Bureau of Economic Research in conjunction with the Committee on Recent Economic Changes, pp. 363-71.

TABLE 9  
INDEX NUMBERS OF AVERAGE PURCHASING POWER, PER UNIT,  
OF COMMODITIES AT WHOLESALE IN THE UNITED STATES  
1913 TO SEPTEMBER, 1933  
Classes of Producers' and of Consumers' Goods

Commodity group	Index numbers of per-unit purchasing power							
	1913	1919	1921	July 1929	Feb. 1933	July 1933	Aug. 1933	Sept. 1933
Producers' goods .....	100	98	95	95	92	95	94	94
Raw .....	100	96	78	90	71	80	77	78
Processed .....	100	100	107	99	114	110	111	110
For human consumption <sup>1</sup> .....	100	104	82	88	65	78	77	76
For capital equipment <sup>1</sup> .....	100	94	110	103	122	111	111	110
Consumers' goods .....	100	102	108	108	112	108	109	109
Raw .....	100	97	101	115	104	110	108	105
Processed .....	100	103	109	106	114	108	110	111
Producers' goods intended for human consumption <sup>1</sup>								
Foods .....	100	107	78	98	64	80	76	74
Non-foods .....	100	102	84	81	67	78	78	78
Consumers' goods, processed								
Foods .....	100	102	98	102	98	94	92	92
Non-foods .....	100	105	124	111	132	123	128	130

<sup>1</sup> These index numbers include building materials prior to 1929, but not since then. Beginning with 1929 a separate index number of the prices of building materials has been constructed (see Appendix Table). Earlier and later index numbers have been spliced, in this table, on the assumption that they are representative of the general price movements occurring in the groups in question.

meant relatively low material costs for manufacturing enterprises, with consequent opportunities for operating profits, but high costs of capital goods. New plants, built at high cost, and expensive industrial equipment swelled investment values appreciably during this period. The present measurements show that relatively high charges for new capital equipment persisted throughout the depression that began in 1929. Between July, 1929, and February, 1933, the per-unit worth of goods for use in capital equipment had risen from a level 3 per cent above the 1913 standard to a level 22 per cent above that standard. In February of this year the per-unit purchasing power of producers' goods intended for ultimate human consumption stood 35 per cent below the 1913 base.

We have no historical record of such a wide gap as this, between the two varieties of cost which producers must meet. The cost of new capital investment, at such prices, was practically prohibitive. But this difference, too, was appreciably reduced by the price changes of 1933. By July, 1933, the index of per-unit worth of producers' goods for human consumption had risen to a level 22 per cent below the 1913 standard, while the corresponding index for capital equipment had fallen to a level 11 per cent above that standard. The latter figure, very close to that of 1921, still represents capital costs which appear unduly high, with reference to past standards, but the gap between these and other prices was much narrower than it had been five months earlier. The next two months brought only slight changes here. The September figure for capital equipment was slightly below the July entry—a promising sign in view of the other changes which had occurred.

The relations between the prices, and the per-unit purchasing power, of producers' goods intended for ultimate human consumption, after fabrication, and the corresponding measurements for processed consumers' goods are of exceptional interest. These classes of goods (though not identical in composition) represent two distinct stages along the path followed by goods in the course of their fabrication and distribution. The index numbers of purchasing power appear in Table 9.

The recession of 1920-21 brought a sharp drop in the average real worth of goods awaiting fabrication, and intended for consumption and direct use. At the same time there occurred a material advance in the real worth, per unit, of processed consumers' goods. After this recession there was no restoration of earlier price relations. Processed consumers' goods remained on a level of real values permanently higher than in 1913. Sellers of producers' goods intended for human consumption suffered an enduring loss in economic power, while the purchasing power of consumers in general was maintained through higher industrial wages and higher disbursements to certain other groups of income recipients. The economic system moved forward under a modified set of price relations. The recession and depression of 1929-33 accentuated the disparity between these two commodity groups. In February, 1933, the index of per-unit purchasing power of consumption goods, at the producers' goods stage, was 35 per cent below the 1913 standard. The index for similar goods ready for consumption was 14 per cent higher than in 1913. Price declines among goods purchased by manufacturers for fabrication and sale to consumers were not accompanied by corres-

ponding declines in the prices of goods in shape for final consumption. (This expanding margin, which is found, in some degree, in all periods of price recession, is partially explained by the fixed character of many production costs and by the relatively higher overhead charges assessed against each unit of a reduced output. The ability of manufacturers in certain industries to adapt themselves to changed conditions of demand through reduction of output, rather than of price, is also a factor of some importance.)

Here, also, the forces of recovery during the first five months of advance served to bring about relations closer to earlier standards. The prices of such commodities at the producers' goods stage were raised appreciably, while no corresponding advance occurred in the prices of finished goods. The margin in July, 1933, was still very wide, judged by pre-war standards (purchasing power indexes were 78 and 108, respectively, for producers' goods intended for human consumption and for processed consumers' goods), but the force of price recovery had been exerted, apparently, in directions conducive to more stable and more equitable price relations. From July to September, however, consumption goods awaiting fabrication declined again, in purchasing power, while finished consumers' goods advanced. This rise in high-priced goods, with a fall in low-priced goods, represents a reversion toward earlier and probably less desirable relations.

#### CONCLUSION

##### PRICE RELATIONS AND ECONOMIC RECOVERY

The price situation at the beginning of 1933 was marked by certain outstanding characteristics. Prices to consumers of finished goods were high, with reference to the prevailing price level; the prices of raw materials, on which the incomes of important consuming groups depend, were very low. The prices received by producers of agricultural products, in particular, were seriously depressed, while the prices paid by farmers for goods needed for production and for family maintenance were high. Low prices of the raw materials of industry, coupled with relatively high prices for finished goods, put manufacturers in an advantageous position, on the operating side. (This price advantage, of course, was largely fictitious, because the volume of production and sales was so abnormally low.) On the investment side, however, there prevailed relatively high prices for goods entering into capital equipment and for building materials, a condition which (with other circumstances) tended to restrict activity in industries producing capital goods. A factor which has in the past served to stimulate revival from depression was thus reduced materially in potency.

These conditions presented certain definite problems. One was how the flow of goods to consumers

was to be stimulated with the real value of raw materials so low, in comparison with earlier standards, and with the real value of consumers' goods so high. The restoration of activity in industries producing capital goods, with production and sales low in volume and with the costs of new equipment excessively high, constituted a second major problem.<sup>12</sup>

As regards the first of these problems three alternatives existed, on the price side. One was a resumption of activity under the then-existing conditions—low prices for raw materials and relatively high prices to consumers. A second was continued liquidation of finished goods until something approaching pre-recession parity with raw materials was restored. A third was the restoration of more satisfactory terms of exchange between raw and finished goods through advances in the prices of raw materials, rather than through further liquidation of manufactured goods.<sup>13</sup>

Of these alternatives the first was not an impossible one. A modern economic system functions not under one rigorously prescribed set of conditions, but may

<sup>12</sup> Each of these problems involves factors beyond the field of prices, but it is the price phase which now concerns us.

<sup>13</sup> All these alternatives, of course, involved the physical processes of production and consumption, as well as prices. For it is a function of prices to reflect underlying relations among physical quantities. To the extent that prices are merely symbols, enduring changes in price relations may be effected only through alterations in the physical quantities concerned.

This matter requires brief comment, if the present exposition is not to be misunderstood. In a thoroughly competitive economic system, with a price system flexible in all its parts, prices would be simply symbols, reflecting physical relations and changing immediately and freely as the physical factors of demand and of supply changed. Prices would be passive elements in economic change. But when parts of the price system lose their elasticity, when the prices of some classes of commodities or services become inflexible through regulation, agreement, monopolistic or semi-monopolistic control, or even through the stabilizing influence of important fixed charges, then prices may become active factors in economic change. Under these conditions 'price disparities' may cease to be merely reflections of changed physical relations, and may become themselves instrumental in influencing the physical processes which, in a relatively simple and freely competitive economy, they merely mirror. The chains of cause and effect which tie together prices and the physical processes of economic life may thus operate in both directions. Under contemporary conditions they do so operate. It is an inaccurate view of modern economic life to conceive of a one-way causal relationship.

During a period of violent change in economic conditions, marked by wide fluctuations in the average level of prices, rigidity in some parts of the price structure tends to prevent prompt adaptation of all the elements of that structure to the new situation. At such a time changed price relations cease to be merely symptoms and become themselves active factors, conditioning the process of physical readjustment. And since the readjustment of physical conditions (of consumption, production, trade) to sharply modified price relations is likely to be an extended and economically painful process, price disparities

adapt itself to a variety of alternative situations. But with a gap as wide as that prevailing in the winter of 1932-33 it was highly improbable that working relations among economic elements could be restored on the basis of existing price conditions. The modes of using our productive resources, our investments of capital, the economic distribution of man-power were not adapted to the price relations which existed after four years of deep disturbance. Radical shifts in the distribution of income and enduring changes in the status of economic groups would have been involved, changes more profound and disturbing than would have been accepted without continuing social unrest. The restoration of price relations closer to those prevailing at earlier times, a restoration to be effected through continued liquidation of prices still substantially above the average or through the raising of the most seriously depressed prices, seemed to be an essential condition of economic recovery. So also the second problem, on its price side, came down to the central question whether the prices of goods entering into capital equipment could be brought more closely into line with other prices, either through the raising of other prices or the reduction of the prices of capital goods and building materials.

The recovery that was initiated last March tended definitely, up to July, to restore earlier relations through a relatively rapid advance of the more heavily depressed prices. In all the major groups reviewed, in which widely disparate price relations existed at the beginning of 1933, the first effects of revival were definitely correctional in character. The incidence of price-raising forces seemed to be precisely that which was economically desirable. Although the advance appeared to reflect a swift reaction to changed economic prospects, rather than the customary slow germination of recovery, the initial effects on the price structure were unquestionably salutary. With the check to the general price advance in mid-summer the pressure of price change was shifted. Commodity groups which had most successfully resisted the price decline of the preceding four years, and which had moved upward but slowly during the first months of recovery, began to feel the push of changing values, while there was a clear retardation of the rise of prices among the groups previously most active. As a result, the general price advance quite definitely changed its character during August and September. Low-priced commodities—raw materials, notably raw farm products, foods, consumption goods not yet fabricated—declined or advanced but slightly, while goods already relatively

may constitute real barriers, in a positive sense, to a prompt restoration of full economic activity.

References in the text to price disparities, in relation to the problem of restoring working physical relations among the elements of our economic life, are to be interpreted with this general statement in mind.

high-priced—manufactured goods, non-foods, goods other than raw farm products, finished consumers' goods—took the lead in the price advance. Retail prices, particularly prices of clothing and house-furnishings and prices paid by farmers, rose sharply. The advance in living costs over these two months exceeded the rise in wholesale prices. The per-unit purchasing power of farm products declined in August and September, and the purchasing power of the per-capita earnings of manufacturing employees was reduced in September. At the end of that month price disparities, among major commodity groups, were on the whole wider than they had been in July.

The net change in price relations between February and September, 1933, was distinctly favorable to a general restoration of economic activity. But the picture is more clouded and uncertain than a survey of these net movements alone would indicate. The reversal, between July and September, of earlier tendencies within the price structure raises some pressing questions, questions which are given added weight by industrial changes connected with the enforcement of the National Recovery Act. These changes, notably the enforcement of minimum wages and the shortening of hours, may have, as first effect, a raising of industrial costs. It is the hope of those administering the Act that such higher costs, if actually realized, may be carried without an enhancement of prices. Greater volume will enable fixed charges to be spread over a larger number of units, so that overhead costs per unit of product may be reduced if sales and output are expanded. It is hoped that such an increase in volume may be maintained through increase in wage disbursements, and through an increase in farm income. But if the effect of these changes is to enhance, relatively, the prices of finished goods ready for consumption and of goods intended for use in capital equipment, the progress of economic recovery will not be facilitated.

We may not say that certain precise relations among elements of the price structure are essential to economic recovery, but major disparities created over a short four-year period may properly be looked upon as barriers to normal activity—barriers in themselves, or in the cost, income and purchasing power relations they represent. Such price disparities still exist, disparities wider than those prevailing after some of the most severe recessions of the past. The problem of correcting these disparities is less acute, in degree, than it was last February, but it remains urgent.

This central problem of price recovery has taken on a new aspect during October. The net movement of wholesale prices during the first three weeks of this month was a declining one, with structural changes in price relations apparently continuing the tendencies prevailing in August and September. The announcement of the Administration's new monetary policy in-



jected novel elements into the situation. The possible effects of this policy upon the general level of domestic prices and upon international price relations have been widely discussed. Of equal or greater concern, as regards the current production and exchange of goods and the economic status of different producing groups in the United States, is the effect of this move on the structure of domestic prices. How will the forces brought into play under the new policy impinge upon the price system? What elements of that system will react first, and in what degree? What effect will these movements have upon the price relations which have developed during the last four years? Will the changes to be expected produce a price structure

more or less balanced than that now existing, more or less favorable to a resumption of normal economic activity?

Much attention has been given to the relation of the price level to the existing debt structure. This is, beyond question, a matter of central importance, as regards the equity of debtor-creditor relations, and the problem of general economic readjustment. Of no less profound concern are the relations prevailing among elements of the price structure at a given time. These have a direct and immediate bearing on the continuing operation of our productive and distributive mechanisms. Both sets of relations are involved in the monetary program which has now been launched.

APPENDIX TABLE  
INDEX NUMBERS OF WHOLESAL PRICES<sup>1</sup>

Commodity group	Index numbers									
	July 1929	Feb. 1933	March 1933	April 1933	May 1933	June 1933	July 1933	Aug. 1933	Sept. 1933	
All commodities	100.0	61.7	62.2	62.6	65.2	68.0	72.3	73.4	74.4	
Raw materials	100.0	50.6	51.8	52.6	56.4	59.7	65.5	64.7	65.6	
Manufactured goods	100.0	68.6	68.6	68.9	70.7	73.1	76.5	78.6	79.8	
Foods	100.0	50.0	51.1	52.6	56.4	58.3	63.6	62.5	62.2	
Non-foods	100.0	69.1	69.1	68.9	70.9	74.0	77.8	80.2	82.2	
Products of American farms, raw	100.0	39.5	41.5	43.1	49.4	53.0	59.4	57.3	56.5	
All other products	100.0	68.2	68.2	68.3	69.9	72.3	76.1	77.9	79.6	
Producers' goods	100.0	59.5	60.4	60.9	64.5	67.3	72.1	72.4	73.4	
Consumers' goods	100.0	64.4	64.5	64.7	66.4	68.8	72.7	74.5	75.7	
Producers' goods	100.0	59.5	60.4	60.9	64.5	67.3	72.1	72.4	73.4	
Raw	100.0	49.1	50.7	51.7	56.3	59.3	64.6	63.4	65.0	
Processed	100.0	71.4	71.3	71.6	73.6	76.2	80.5	82.4	82.8	
For human consumption	100.0	45.8	47.6	48.8	54.7	58.3	64.6	64.1	64.3	
For capital equipment	100.0	73.1	72.3	73.0	73.8	75.8	77.8	78.6	79.3	
For building materials	100.0	75.9	76.3	76.4	77.6	80.4	84.3	86.0	86.9	
Consumers' goods	100.0	64.4	64.5	64.7	66.4	68.8	72.7	74.5	75.7	
Raw	100.0	55.8	55.8	55.4	56.8	61.1	69.1	69.0	68.1	
Processed	100.0	66.5	66.6	67.0	68.6	70.7	73.5	75.9	77.5	
Producers' goods intended for human consumption										
Foods	100.0	40.2	43.0	45.0	50.9	52.5	59.0	56.4	55.9	
Non-foods	100.0	51.1	52.1	52.5	58.4	63.8	69.8	71.4	72.4	
Consumers' goods, processed										
Foods	100.0	59.0	59.4	60.6	63.3	64.1	66.5	66.3	66.8	
Non-foods	100.0	73.2	73.0	72.7	73.4	76.6	79.9	84.4	87.2	

<sup>1</sup> These index numbers have been constructed by the National Bureau of Economic Research from price quotations compiled by the United States Bureau of Labor Statistics. They are weighted aggregates of actual prices, with weights based on average quantities produced in 1927 and 1931.

### THE BULLETIN

Dr. Mills, the editor of the *Bulletin*, contributes the fifth issue of 1933. Subscribers will welcome these data which supplement measurements contained in *Economic Tendencies in the United States*.

It is expected that the report on National Income, 1929-1932, upon which the National Bureau is collaborating with the United States Department of Commerce, will be presented to the United States

Senate in January, 1934. As soon afterwards as possible, the National Bureau will issue a *Bulletin* presenting a summary of this report.

Early in 1934, two other numbers of the *Bulletin* will appear: one by Solomon Fabricant who will analyze the impact of the depression on the profits of all corporations, as revealed by official income tax data; the other by Charles A. Bliss who will deal with recent movements in production.

### NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

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### APPOINTMENT OF EUGEN ALTSCHUL

The generosity of the Maurice and Laura Falk Foundation of Pittsburgh, Pennsylvania, enables the National Bureau of Economic Research to bring Eugen Altschul, formerly of the University of Frankfurt, to this country as an associate on its research staff for one year.

Dr. Altschul already has associations with the National Bureau as the director of the Frankfurter

Gesellschaft für Konjunkturforschung and as the Editor of the German translation of Dr. Mitchell's *Business Cycles: The Problem and Its Setting*. The series of seventeen publications of this organization under the editorship of Dr. Altschul includes a volume (No. 7) by Dr. Simon Kuznets of the National Bureau staff, entitled *Wesen und Bedeutung des Trends*.

For the past few months Dr. Altschul has been in London assisting Sir William Beveridge on the English section of the international investigation of price histories. His presence on the research staff of the National Bureau makes possible the addition of a special analysis of agricultural movements to its studies of business cycles.

### IN PRESS

*Production Trends in the United States Since 1870*, by Arthur F. Burns; 350 pp., 21 charts, 54 tables; \$3.50.

The National Bureau announces the publication in November of *Production Trends in the United States Since 1870* as Volume 23 of its series of research reports.

This study, which was made by one of the 1931-32 research associates at the National Bureau, is now in page proof and will be distributed to subscribers at an early date.

Dr. Burns' book presents the results of an intensive study of the production trends of individual industries and of the trend of total production. Dr. Burns finds that the rates of growth of individual industries decline as their age increases; that the economic system is characterized by major cyclical swings, and that these major swings are related to business cycles. The study of individual commodities is supplemented by a detailed analysis of production indexes.

The volume includes a summary chapter by Dr. Mitchell. Also, a complete tabulation of over one hundred production series—many of them inaccessible to most students—is given in an appendix.

In his introduction Dr. Mitchell says that the reader will find in this volume "the most important contribu-

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