

something approaching pre-recession parity with raw materials is restored. A third alternative is the restoration of more satisfactory terms of exchange between these two broad classes of goods through advances in the prices of materials, rather than through further liquidation of manufactured goods.

The first is not an impossible alternative. The shattering of established price relations is not a necessary barrier to economic recovery. A modern economic system functions not under one rigorously prescribed set of conditions, but may adapt itself to a variety of alternative situations. (The process of adaptation may, to be sure, be slow and painful.) Adaptation to altered price relations which might be adverse to prompt revival may be facilitated by favorable conditions elsewhere in the economic system, as was the case during the recovery of 1921-22. But such favorable conditions—rapidly enhanced productivity, highly favorable opportunities for expansion in foreign markets, the exploitation of a novel credit mechanism—may not be surely counted upon to play their magic role again. In default of such developments the persistence of existing price inequalities, with their accompaniment of low purchasing power among domestic agricultural producers and among important foreign producers of raw materials, may exercise a continuing adverse influence upon business recovery.

Further liquidation of the prices of manufactured goods is another possibility offering one means of restoring the deficient purchasing power of large groups of consumers. To date, raw materials have lost close to 40 per cent of their 1929 value, per unit (in terms of current dollars), while manufactured goods have lost approximately 25 per cent. If parity is to be restored through reduction of the prices of manufactured goods until this gap is bridged, further rigorous deflation is necessary. Extensive wage and salary reductions will be inevitable; a further writing-off of investment values, with all that that implies, will be unavoidable; all the innumerable readjustments of debtor-creditor relations and of other economic relations which drastic changes in the general level of prices involve will be required, in intensified degree. Nor can we be sure that a reduction of the prices of manufactured goods to a level 40 per cent below that of July, 1929, (and some 15 per cent below that of 1913) will attain the required end. For in the meantime continuing economic distress may well force lower the level of raw material prices—and the pursuit will begin again.

Recovery of the most seriously depressed prices offers another means of regaining a status favorable to a freer flow of goods and services. The severe strains of liquidating further the prices of manufactured goods and of services would be largely avoided by a strong recovery of this sort. Even the beginning of such a movement would restore some of the lost purchasing power of raw material producers, for these goods react promptly to changes in monetary values and to the stirring reviving activity. The benefits of the readjustment would not have to wait upon the completion of the movement.

This last method of attaining conditions of recovery after depression was the one which prevailed, without premeditation, during the quarter century preceding the 1920 crisis. The persistent, underlying force of a long-term advance in the level of prices operates to stimulate recovery, after depression, among raw materials, producers' goods, and those other groups which are most sensitive to changes in monetary conditions. Some liquidation among fabricated goods there must be at such times, but the upward push of prices, affecting most immediately the commodity groups which suffer most severely in the cyclical drop, shortens and softens the downward revision of values and costs among the tardy elements of the price system.

There is no present evidence that the rising trend of prices which characterized the pre-war era has persisted. The record of the last decade indicates, indeed, that a reverse movement may be under way. If this be true the force of the long-term movement, which tended to prolong phases of prosperity and to curtail liquidation and ameliorate its pains, may be expected to operate in the opposite fashion, prolonging liquidation and intensifying its difficulties. Prices of commodities among the groups which are most sensitive to the forces of cyclical recession may be further depressed through the persistent push of the long-term factor. The fortuitous aid afforded by the secular movement in pre-war days would under these conditions be replaced by a fortuitously depressant factor.

There was much to justify a policy of dependence upon the processes of natural recovery when the rising trend of prices was thus tending to curtail the period of liquidation and to alleviate its pains. It is a policy which is harder to defend when this assistance has been withdrawn, when, in fact, this external force may be working to retard those readjustments which conduce to revival. Under these conditions, and in the face of such wide price discrepancies as have developed during more than two years of liquidation, the possibility of positive action may well be explored.

The establishment of conditions favorable to recovery will doubtless involve changes of the three types suggested as alternatives; as regards the price structure as a whole they are not mutually exclusive. To some extent there will be adaptation to price relations quite different from those of the pre-recession period. To some extent there will be further liquidation of the prices of finished goods and of consumers' goods, with accompanying wage cuts and writing-down of investment values. To some extent earlier relations will be restored, or approximated, through enhancement of the values of the goods now most seriously depressed. The relative importance of each of these types of change will depend, in part, upon the conditions of production and upon the state of the market for goods of different types. But economic policy, deliberately formulated and actively enforced, may also play a part in determining the degree to which each of these modes of establishing the conditions of recovery may prevail.

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1812
NEW YORK CITY
NEWS-BULLETIN
National Bureau of Economic Research, Inc.

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Propaganda

No. 42

51 MADISON AVENUE (MADISON SQUARE) NEW YORK CITY

Dec. 23, 1931

Aspects of the Price Recession of 1929-1931

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THE recession of prices that began in the United States in the summer of 1929 has persisted for 27 months, and has carried wholesale prices to a level approximately 30 per cent below that prevailing in July, 1929. The inequalities which have developed among the prices of different classes of commodities during this period exceed any of which we have record for previous periods of price decline. These inequalities at once reflect differences among commodities in respect of conditions of production and distribution, and affect the processes of readjustment and recovery. They have become major factors in the current economic situation. The present review summarizes the general price changes of this period and defines certain prevailing price disparities.¹

Comparison of Three Periods of Recession

The price declines occurring in 1907-08, 1920-21 and 1929-31 have been the most severe recorded in this country during the last thirty years. These are compared in the following table:

TABLE I
Comparison of Price Changes during Three Periods of Recession, with Respect to Degree, Duration and Intensity of Decline²

| Period | Degree of decline (per cent) | Duration of decline (months) | Intensity of decline (average monthly rate of decline) (per cent) |
|---------|------------------------------|------------------------------|---|
| 1907-08 | 8.2 | 4 | 2.1 |
| 1920-21 | 45.3 | 20 | 3.0 |
| 1929-31 | 30.2 | 27 (to October, 1931) | 1.3 |

The degree of price decline up to October, 1931, greatly exceeded the precipitate but minor drop of 1907-08, but fell short of that which occurred in 1920-21. As regards duration the current price recession has been far more severe than the brief four-months fall which followed the 1907 crisis. It has already exceeded

¹The situation existing in September and October, 1930, was discussed in "Some Aspects of the Price Recession of 1929-1930," appearing in a *News-Bulletin* of the National Bureau of Economic Research dated Nov. 22, 1930. The present Bulletin constitutes a revision and continuation of the earlier issue.

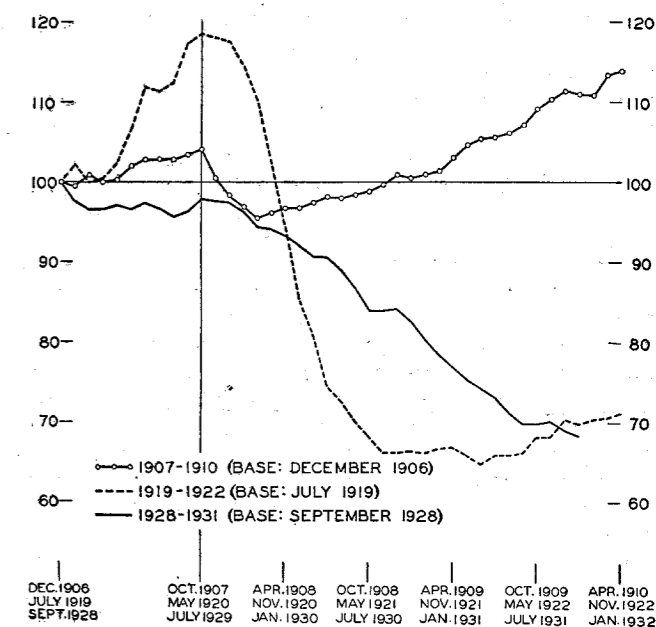
In this paper, as in the earlier one, comparisons are restricted in the main to wholesale prices. In a complete study of price inequalities and of correlated economic changes full account would be taken of alterations in other prices, in all elements of cost, and in incomes.

by eight months the lengthy decline of the first post-war recession. The present decline has been less intense, however, than either of the other two. The rate of recession in the level of wholesale prices has averaged 1.3 per cent per month since July, 1929, as compared with an average rate of approximately two per cent in the 1907-08 decline and of three per cent per month in the 1920-21 drop.

These changes appear in greater detail in Figure 1, which shows the movements of the Bureau of Labor

FIGURE 1

MOVEMENTS OF INDEX NUMBERS OF WHOLESALE PRICES DURING THREE PERIODS OF RECESSION



²The measurements in Table I, which are based upon the wholesale price index numbers of the United States Bureau of Labor Statistics, relate to the decline from the high point preceding recession to the low point preceding the following revival, for each of the periods 1907-08 and 1920-21. The figures for the current recession relate to the period July, 1929—October, 1931. The level of prices in September, 1928 was slightly higher than in July, 1929, but it seems proper to date the current recession from the latter month.

In computing the rate of decline the recession has been looked upon as a cumulative process. The average monthly rate is therefore a compound interest rate.

Statistics index numbers of wholesale prices during each of these periods. In each case the index numbers are expressed as relatives of the value prevailing ten months before the recession began.

There are marked differences between these periods, with respect to the behavior of general prices. Prior to the beginning of the actual decline of 1907-08 the price level moved upward slowly; prior to the recession of 1920-21 the price level rose sharply. Before the current recession the price level sagged slightly. It is noteworthy that twenty-seven months after the beginning of the decline in 1907 prices were moving steadily upward, at a level above that preceding the break; twenty-seven months after the beginning of the 1920 decline a strong price advance was under way, though at a level well below the preceding high. Twenty-seven months after the 1929 break prices were receding slightly, at a rate appreciably lower than that which had prevailed up to the early summer of 1931.³

We have a picture here of a short, sharp liquidation in the commodity markets in 1907-08, a protracted and violent liquidation in 1920-21 and, to date, a process of liquidation which has been less intense in respect of rate of decline than either of the other two, more severe as regards duration, and falling between the two in degree of recession from the preceding peak.

Current Price Inequalities

The business world is affected directly not by movements of the general level of prices but by changes in the prices of individual commodities and, more particularly, by the inequalities of price changes which follow in the wake of such general movements. 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, and unless the loss is compensated by increases in the number of units sold producers of that commodity will suffer a loss of aggregate purchasing power. 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 in price less rapidly during a period of price decline. It is through such changes in aggregate purchasing power that the economic center of gravity shifts from time to time, as economic power passes from group to group. Per unit purchasing power is, of course, just one element in the aggregate: changes in volume may play an even more important part in the shifts of economic power. But during periods of rapid price movement changes in the price factor may dominate.

In tracing changes in purchasing power⁴ during the present recession of prices we may first take as the standard of reference the situation prevailing at the peak of prices in July, 1929. The figures in Table 2 indicate the magnitude of certain of the changes in purchasing power, per unit, that occurred during the twenty-seven months between July, 1929, and October, 1931.

³—The level of wholesale prices for November, 1931 was but slightly below that for October. During December price weakness has again appeared.

⁴—Degree of change in the purchasing power of commodities in a given group is determined by dividing the index of price changes in that group by an index of the change during the same period in the level of wholesale prices.

TABLE 2
Changes in Purchasing Power, per unit, between
July, 1929 and October, 1931
Selected Commodity Groups⁵

| Number of Price Quotations | COMMODITY GROUP | Degree of Change in Purchasing Power (Per cent) |
|----------------------------|--|---|
| 140 | Raw materials | - 13.4 |
| 338 | Manufactured goods | + 6.1 |
| 163 | Foods | - 12.9 |
| 315 | Non-foods | + 7.3 |
| 81 | Products of American farms, raw | - 24.8 |
| 397 | All other products (including processed farm products) | + 6.0 |
| 285 | Producers' goods | - 1.9 |
| 193 | Consumers' goods | + 2.8 |

⁵—These measurements are based 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 unweighted geometric means of relative prices.

The current price recession has involved a loss of 13.4 percent in the average real value, per unit, of raw materials. The real value (i.e., the purchasing power in terms of goods in general, at wholesale) of manufactured goods has increased by 6.1 per cent. Foods have lost in purchasing power per unit, while non-foods have gained. The real per unit value in wholesale markets of products of American farms, in raw state, declined no less than 24.8 per cent, while the value of all other products (including manufactured farm products) advanced 6.0 per cent. Producers' goods (i.e., raw materials or other goods which are intended for use in the construction of capital equipment, or which must undergo further changes in form before being ready for consumption) have been somewhat cheapened, while goods in shape for consumption have advanced in real value.

Liquidation in wholesale markets, it is clear, has been most severe for raw materials, for producers' goods, for foods and for farm products. Sellers of these commodities have suffered while buyers have gained, in so far as the price factor is concerned.

Recent Changes among Producers' and Consumers' Goods

These broad categories conceal important changes among the prices of subordinate commodity groups. The movements occurring among different classes of producers and of consumers' goods are of central importance. Relevant measurements appear in Table 3.

Producers' goods, that is, goods which are bought for business purposes and not for consumption or direct use, suffered a loss of some two per cent in real value, per unit, between July, 1929, and October, 1931. Within this group there are marked divergencies of movement. Raw producers' goods suffered an almost catastrophic decline, losing more than 16 per cent of their per unit value, in terms of other goods, during this period. Processed producers' goods gained 8 per cent in real value per unit within the same interval. The price position

TABLE 3
Changes in Purchasing Power, per unit, between July, 1929, and October, 1931, of
Different Classes of Producers' and Consumers' Goods

| Number of Price Quotations | PRODUCERS' GOODS | Degree of change in purchasing power (per cent) | Number of Price Quotations | CONSUMERS' GOODS | Degree of change in purchasing power (per cent) |
|----------------------------|---|---|----------------------------|-----------------------------------|---|
| 285 | All producers' goods | - 1.9 | 193 | All consumers' goods | + 2.8 |
| 107 | Raw | - 16.4 | 33 | Raw | - 2.3 |
| 178 | Processed | + 8.1 | 160 | Processed | + 3.9 |
| 130 | Destined for human consumption | - 17.6 | | | |
| 155 | Destined for capital equipment | + 13.3 | | | |
| 130 | Producers' goods destined for human consumption | - 17.6 | 160 | Consumers' goods, processed | + 3.9 |
| 53 | Foods | - 25.1 | 84 | Foods | - 4.3 |
| 77 | Non-foods | - 12.1 | 76 | Non-foods | + 13.7 |

of those who sell raw materials to manufacturers has been most seriously affected by the events of the last two and a half years. Sellers of processed producers' goods have suffered no such loss.

Again, we divide all producers' goods into those which are destined for human consumption, after further processing, and those which are to be employed in the making of capital equipment. Goods of the former type have suffered an average loss in real value per unit of more than 17 per cent; goods destined for use in the making of capital equipment have gained in purchasing power approximately 13 per cent per unit. Here is one of the sharpest cleavages which the price disturbances of the last two years have brought. Goods intended for the construction of new plants and new equipment have become increasingly costly, in terms of real values. There is no stimulus here to investment in capital equipment. On the other hand, goods intended for consumption and direct use have been cheapened at the initial stage of production as probably they never have before in a similar time interval.

A suggestive comparison may be drawn between price changes of goods bought by manufacturers for further processing, but intended for ultimate consumption, and price changes among fabricated goods in shape for consumption. There is not exact identity among the goods in these two classes, but the two groups are representative of commodities at successive stages of fabrication and distribution. At the first stage there has been the sharp decline noted—a decline of 17.6 per cent in purchasing power in 27 months. The wholesale prices of commodities representing the final stage—processed consumers' goods—have dropped somewhat, but since this drop has been less than the decline in general prices they have gained 3.9 per cent in real value during the same period. The food group has declined in both categories; non-foods have lost in real value at the producers' goods stage, but prices of non-foods in shape for final use have shown no such decline. Their real value has increased substantially.

The margin which has thus developed during a period

of 27 months between the prices at which goods intended for ultimate consumption are bought by manufacturers for fabrication and the prices at which manufactured goods are bought by merchants for sale to final consumers does not necessarily represent profits to fabricators. Volume of output has declined, various elements of fabricating cost and of overhead cost have advanced (in terms of constant dollars), partly as a result of the decline in volume, partly because of inherent inflexibility. The drop in the prices of the 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 final consumers and the failure of the prices of the goods bought by such consumers to decline correspondingly check the flow of goods to ultimate consumers. The disparity between buying prices and selling prices of manufacturers, a disparity which might be interpreted as a condition conducive to high profits, is in part due to the time lag between the purchase of materials for production and the sale of final product; in part it reflects the difficulty of reducing selling prices when volume of sales is declining and when important elements of cost resist liquidation.

Price Changes and Pre-war Purchasing Power

The changes discussed above have been those which occurred during the brief period between July, 1929, and October, 1931. The situation prevailing at the peak of prices preceding recession is in some respects an unsatisfactory standard of reference. What has happened during the present and earlier recessions to the relations between major commodity groups which prevailed before the War? The rather drastic movements of the last 27 months may represent a return to earlier conditions, rather than a departure from relations which might be considered normal. If so, our interpretation of recent movements and our opinion as to the probable effect of these movements upon general economic conditions will be altered.

The index numbers in Table 4 afford a general view of the situation which prevailed before the current

TABLE 4
Effects of the Current Recession on Prices and Related Elements, with Reference to a Pre-War Standard

| Economic Element ⁶ | 1913 | July 1929 | Oct. 1930 | Oct. 1931 |
|---|------|-----------|-----------|-----------|
| Wholesale price level..... | 100 | 140 | 118 | 98 |
| Cost of living..... | 100 | 172 | 164 | 149 |
| Retail food prices..... | 100 | 158 | 144 | 119 |
| Prices received by farmers..... | 100 | 140 | 106 | 68 |
| Prices paid by farmers..... | 100 | 155 | 144 | 126 |
| Per capita earnings, manufacturing labor..... | 100 | 228 | 212 | 182 |

⁶The index of wholesale prices is that of the 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. Retail food prices are also from the Bureau of Labor Statistics, being an average of the retail prices of 42 commodities on the fifteenth of the month, weighted according to the consumption of the average family. 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 living and production. 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 and splicing 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.

price recession set in, and of the conditions existing in recent months, with reference to a pre-war standard. These measurements relate to actual price and wage movements, not to purchasing power changes.

By October, 1931, the level of wholesale prices, as defined by the index of the United States Bureau of Labor Statistics, was two per cent below the 1913 level. The effects of the war-time and immediate post-war advance had been cancelled, and we stood again on the pre-war level. But the same was not true of other elements of the complex system of prices which conditions economic processes. The average prices received by farmers for their products were 32 per cent below the 1913 average, having declined more than 50 per cent during the preceding twenty-seven months. Prices paid by farmers for goods used in production and for living were 26 per cent above the pre-war level. The cost of living for industrial wage-earners remained 49 per cent above the pre-war base, though food prices at retail, one important element of living costs, were only 19 per cent above the 1913 average. The per capita earnings of manufacturing labor, that is, of employed labor, were in October, 1931, approximately 82 per cent above the 1913 average, having declined from a July, 1929, level which was 128 per cent above the pre-war average.⁷

These striking discrepancies indicate the magnitude of the shifts that have occurred among the different economic elements, and suggest the severity of the strains that have developed within the last several years. Farm prices 30 per cent below the pre-war level, wholesale prices at that

level, living costs 50 per cent above, and wages still higher on the scale—here are such alterations in price relations as might normally be spread over several generations. If they were so spread, and if the slow processes of secular change were bringing them about, adaptation to them might be secured through gradual and more or less painless changes. But these have been rapid shifts, and the readjustment called for has been forced and painful.

We shall throw further light on these changes by measuring recent movements of various elements of the structure of wholesale prices against pre-war standards. The entries in Table 5 define the changes in the per unit

TABLE 5
Changes in Purchasing Power, per unit, between 1913 and October, 1931

| Commodity Group | N ⁸ | Index Numbers of Purchasing Power | | | | | | | | | |
|---------------------------------|----------------|-----------------------------------|------|------|------|------|------|-----------|-----------|-----------|--|
| | | 1913 | 1919 | 1920 | 1921 | 1922 | 1928 | July 1929 | Oct. 1930 | Oct. 1931 | |
| All raw materials | 140 | 100 | 96 | 89 | 83 | 90 | 96 | 94 | 86 | 81 | |
| Manufactured goods | 338 | 100 | 101 | 105 | 108 | 104 | 102 | 103 | 106 | 109 | |
| Industrial raw materials | 60 | 100 | 92 | 88 | 78 | 90 | 85 | 81 | 73 | 70 | |
| All other products | 418 | 100 | 101 | 102 | 104 | 101 | 102 | 103 | 104 | 105 | |
| Foods | 163 | 100 | 103 | 91 | 90 | 91 | 101 | 102 | 97 | 89 | |
| Non-foods | 315 | 100 | 98 | 106 | 106 | 105 | 99 | 99 | 102 | 106 | |
| Products of American farms, raw | 81 | 100 | 109 | 93 | 82 | 92 | 104 | 100 | 87 | 75 | |
| All other products | 397 | 100 | 98 | 102 | 104 | 102 | 99 | 100 | 103 | 106 | |
| Producers' goods | 285 | 100 | 98 | 100 | 95 | 97 | 95 | 95 | 92 | 93 | |
| Consumers' goods | 193 | 100 | 102 | 100 | 108 | 104 | 107 | 108 | 112 | 111 | |

purchasing power of commodities in certain major groups between 1913 and selected recent dates. These index numbers are shown graphically in Figure II.

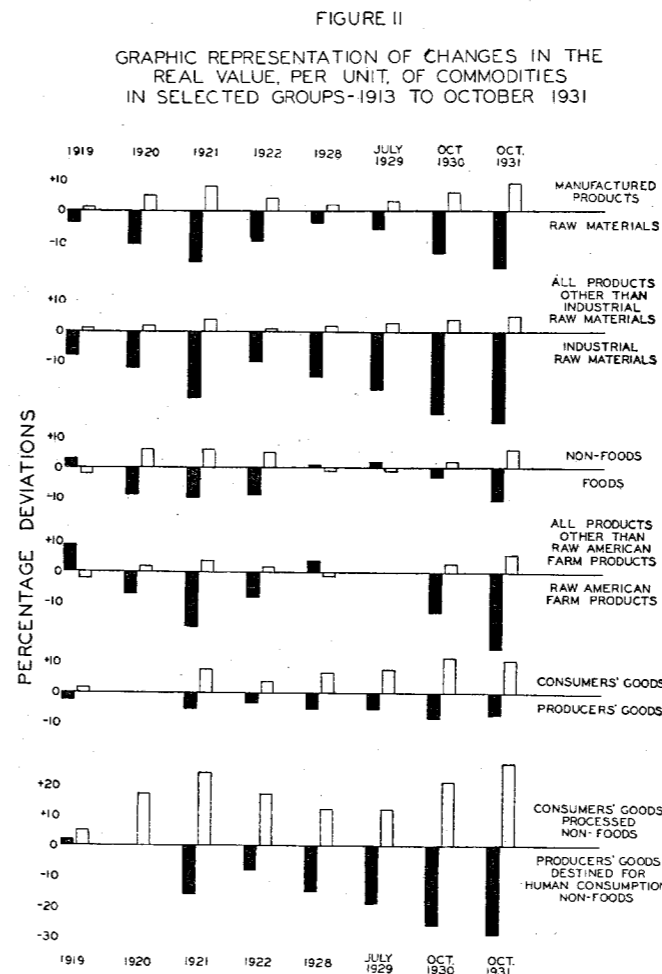
The shifts attendant upon the sweeping fluctuations of the price level during 1920 and 1921 were similar to those

⁷For certain purposes average hourly earnings, rather than average per capita earnings, should be compared with changes in commodity prices. Index numbers of average hourly earnings constructed by the National Industrial Conference Board from reports covering 25 manufacturing industries show the following changes:

| | |
|----------------------|-----|
| July, 1914..... | 100 |
| September, 1929..... | 240 |
| September, 1930..... | 239 |
| September, 1931..... | 228 |

It must be understood that neither average hourly earnings nor average per capita earnings truly represent the condition of manufacturing labor at large, for no account is here taken of the great volume of unemployment. If one is concerned with costs alone it is perhaps proper to consider disbursements to labor on a per capita or on a per hour basis, but on the income side the picture may be quite different. A decline of approximately 47 per cent in aggregate factory payrolls between October, 1929, and October, 1931, indicates how widely different it actually is. The limitation of earnings figures affects, particularly, any comparison of the relative positions of farmers and of manufacturing labor. Agricultural producers are not subject to complete divorce from their means of livelihood.

⁸The numbers of price quotations given relate to October, 1931. For earlier years the samples are somewhat smaller because of the absence of comparable data.



(In the above chart changes are measured as percentage deviations from 1913 parity. "Real Value" means purchasing power, or command over commodities in general, at wholesale.

Heavy bars have been used for commodity groups which in October, 1931, were below 1913 parity in purchasing power per unit, while open columns have been used for commodity groups which in that month were above 1913 parity. Although there was a reversal of positions among certain groups in earlier years, the heavy and the open columns have been used throughout to represent the same groups as in October, 1931.)

which have occurred during the present recession. Raw materials, particularly raw farm products and those industrial raw materials which are subject to a considerable degree of processing,⁹ declined materially in real value. Foods lost in value per unit, while non-foods gained. Producers' goods declined in purchasing power. By 1928 foods and non-foods and raw farm and other products had been restored to their approximate pre-war parity. Raw materials, notably industrial raw materials, and producers' goods remained undervalued in terms of pre-war relations, while manufactured goods and consumers' goods remained over-valued, in relation to the same standard. (There is, of course, extensive overlapping among these different classes.)

Raw materials have dropped further down the scale during the recent recession. At October, 1931, prices an average unit of raw materials was worth 19 per cent less,

⁹In general, only those products were classed as industrial raw materials for which value added in manufacture constituted 20 per cent, or more, of the value of final product.

in terms of commodities in general, than in 1913, while an average unit of manufactured goods was worth 9 per cent more. Those raw products which furnish the basic materials of industry, and which are subject to a relatively high degree of fabrication, have fallen to a level of real value 30 per cent below that of 1913. Raw farm products, at wholesale, have declined to a level 25 per cent lower than that of 1913, a level substantially lower than that reached in 1921.¹⁰

The current recession has involved only a slight change in the relations prevailing between producers' and consumers' goods in 1929, but these relations were far from pre-war parity. The post-war economic advance was made under conditions in which goods ready for consumption were worth more in terms of commodities than in 1913, while producers' goods as a broad class were worth less. The flow of goods to consumers and the general state of prosperity of the decade of the twenties do not seem to have required a cheapening of consumption goods, in relation to other commodities.¹¹ The free movement of goods under these conditions was sustained through the maintenance of the purchasing power of important consuming classes at higher levels than in pre-war days. The incomes of industrial wage-earners, of important groups of salaried employees and of those drawing dividends from corporate undertakings were substantially higher during this decade than in the years immediately preceding the war.

The price movements of producers' and of consumers' goods are of particular interest in their bearing on the course of production and consumption. The following index numbers measure changes in the real value of various types of goods falling within these two broad categories.

TABLE 6
Changes in Purchasing Power, per unit, between 1913 and October, 1931, of different Classes of Producers' and Consumers' Goods

| Commodity Group | N ¹² | Index Numbers of Purchasing Power | | | | | | | | | |
|-----------------------|-----------------|-----------------------------------|------|------|------|------|------|-----------|-----------|-----------|--|
| | | 1913 | 1919 | 1920 | 1921 | 1922 | 1928 | July 1929 | Oct. 1930 | Oct. 1931 | |
| Producers' goods | 285 | 100 | 98 | 100 | 95 | 97 | 95 | 95 | 92 | 93 | |
| Raw | 107 | 100 | 96 | 88 | 78 | 86 | 91 | 88 | 79 | 74 | |
| Processed | 178 | 100 | 100 | 108 | 107 | 104 | 98 | 99 | 101 | 107 | |
| For human consumption | 130 | 100 | 104 | 96 | 82 | 88 | 90 | 87 | 77 | 71 | |
| For capital equipment | 155 | 100 | 94 | 104 | 110 | 107 | 102 | 104 | 109 | 118 | |
| Consumers' goods | 193 | 100 | 102 | 100 | 108 | 104 | 107 | 108 | 112 | 111 | |
| Raw | 33 | 100 | 97 | 89 | 101 | 104 | 113 | 114 | 115 | 111 | |
| Processed | 160 | 100 | 103 | 102 | 109 | 104 | 106 | 107 | 112 | 111 | |

Among producers' goods it is raw materials which have kept down the purchasing power index. In 1921 these materials were worth 22 per cent less, in terms of

¹⁰The 1921 index numbers are based on average annual prices. It is probable that monthly index numbers would show margins wider than those revealed by the annual averages.

¹¹Automobiles, which are not here included, constitute an important exception to this general statement.

¹²The numbers of price quotations for the different groups relate to October, 1931. For certain earlier dates the samples are somewhat smaller.

commodities, than in 1913. Part of this loss was regained, but in 1928 such goods remained 9 per cent below their pre-war real value. Such materials were hard hit by the current recession, and in October, 1931, stood 26 per cent below their 1913 parity with other goods.

Those producers' goods which are intended for ultimate human consumption lost in real value in the recession of 1920-21, remained below their pre-war value standard thereafter, and declined still further during the current recession. This class of goods possessed in October, 1931, a purchasing power per unit 29 per cent below that of 1913, a figure which is substantially lower than the average for 1921.

Consumers' goods, both raw and processed, have remained high in value since 1921. During the current recession processed consumers' goods have gained in purchasing power, while raw materials ready for consumption have declined slightly.

It is suggestive to compare the changes in value among producers' goods destined for human consumption and among processed consumers' goods, for we have represented here two distinct stages along the path followed by goods in the course of their fabrication and distribution.¹³ The index numbers are brought together below.

| N | Index Numbers of Purchasing Power | | | | | | | | | |
|---|-----------------------------------|------|------|------|------|------|------|------|------|--|
| | 1913 | 1919 | 1920 | 1921 | 1922 | 1928 | 1929 | 1930 | 1931 | |
| Producer's goods destined for human consumption — 130 | 100 | 104 | 96 | 82 | 88 | 90 | 87 | 77 | 71 | |
| Consumers' goods processed — 160 | 100 | 103 | 102 | 109 | 104 | 106 | 107 | 112 | 111 | |

The recession of 1920-21 brought a sharp drop in the real value of goods awaiting fabrication, and intended for consumption and direct use. At the same time there occurred a material advance in the real values 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 current recession has accentuated the disparity between these two commodity groups. Price declines among goods purchased by manufacturers for fabrication and sale to consumers have not been accompanied by corresponding declines in the prices of goods in shape for final consumption. Some of the reasons for the disparity have been suggested above, and the significance of such a widening margin has been commented upon.

We may throw further light on these changes by subdividing each of the above groups into foods and non-foods, as in the following table.

Among producers' goods, foods fell to low levels in 1921 and 1922, but had recovered most of their losses

¹³—The quotations relate only in part to identical commodities at different stages of fabrication.

| Commodity Group | N ¹⁴ | Index Numbers of Purchasing Power | | | | | | | | | |
|---|-----------------|-----------------------------------|------|------|------|------|------|------|------|------|--|
| | | 1913 | 1919 | 1920 | 1921 | 1922 | 1928 | 1929 | 1930 | 1931 | |
| Producers' goods destined for human consumption | | | | | | | | | | | |
| Foods | 53 | 100 | 107 | 90 | 78 | 82 | 97 | 95 | 83 | 71 | |
| Non-foods | 77 | 100 | 102 | 100 | 84 | 92 | 85 | 81 | 74 | 71 | |
| Consumers' goods processed | | | | | | | | | | | |
| Foods | 84 | 100 | 102 | 91 | 98 | 95 | 102 | 103 | 104 | 99 | |
| Non-foods | 76 | 100 | 105 | 117 | 124 | 117 | 112 | 112 | 121 | 127 | |

¹⁴—As of October, 1931.

by 1928. The current recession has brought a further drop to a new low. Non-foods not yet in shape for consumption have declined steadily in real value since 1919, barring a slight recovery in 1922. By October of the present year values had declined to a level 29 per cent below that of 1913. In sharp contrast has been the course of real values among manufactured non-foods, ready for use by final consumers. The failure of goods of this class to react to the price drop of 1920-21 left them in 1921 with an average purchasing power, in terms of commodities in general, 24 per cent higher than in 1913. This margin was reduced somewhat during the next eight years, but such goods stood in July, 1929, 12 per cent above their 1913 value. During the present recession these goods have again advanced substantially in real value, as a result of the general price decline. At October prices their average value, in terms of commodities, was 27 per cent higher than in 1913.¹⁵

NOTE:—The index numbers from which the above measurements of purchasing power changes have been derived are geometric means of relative prices. No weights have been employed, except through the use of several quotations for such important commodities as wheat, cattle, etc.

The commodities included are those employed by the United States Bureau of Labor Statistics in the construction of its index numbers of wholesale prices, with two important differences. Automobiles, which are given heavy weight in the index of the Bureau of Labor Statistics, are excluded from the present index, while a selected list from a rather numerous group of commodities for which prices are gathered by the Bureau of Labor Statistics, but which are not used in the construction of that Bureau's index, have been included in the commodities entering into the present calculations. This latter group provides more adequate representation of lumber and of an important class of finished goods, primarily steel products, such as trowels, saws and hammers. Commodities of this class are relatively inflexible in price.

Summary

The striking contrast between the course of the current price recession and that of 1920-21 commands attention. In May, 1920, commodity prices started downward after a sharp eleven-months' advance which had carried the

¹⁵—Commodities of this class, which includes manufactured cotton, woolen, and silk textiles, boots and shoes, dinner sets, cutlery, furniture, glassware, soap, etc., stand near the end of the productive and distributive process. A large proportion of their costs are fixed, and their prices are relatively insensitive. For many of these articles it is difficult to secure standardized, reliable and representative quotations. Some of the commodities in this class have doubtless been subject to price-cutting during the present recession which is not reflected in the quotations currently reported and available in the compilations of the United States Bureau of Labor Statistics.

general level up 23 per cent, and after a five-year advance amounting to 142 per cent. The level from which the decline started was not one which bore any of the aspects of permanence. The relations among different elements of the price structure which existed in May, 1920, had prevailed for only a short time. Flux had been the outstanding feature of the recent past. There had been no consolidation of the economic positions of different economic groups, no making of long-term commitments on the basis of existing prices. As a result, when once the price decline was well under way the barriers to liquidation which are offered by a thoroughly consolidated position and a sense of permanence in commodity values were relatively weak. Within the eleven months of sharpest decline the drop amounted to 44 per cent, and the rate of decline per month averaged 5.1 per cent. Price recession was intense, but the violent change was concentrated within a period of less than a year.

Sharply different was the creeping, persistent illness which began in July of 1929. During eight years of but slight change in the general price level that consolidation of position which was absent in 1920 had been effected. New price relations had been established during these years, new wage policies had been accepted, enduring commitments had been made, and a sense of the permanence of the existing level of commodity values had been built up. All these conditions constituted barriers to a downward readjustment of commodity values, barriers which were particularly strong in industries with high overhead costs or with relatively heavy labor charges. There were forces, of course, which maintained pressure on commodity prices between 1929 and 1931, but the relative slowness of the decline—1.3 per cent a month, as against 5.1 per cent during the stage of sharp liquidation in 1920-21—reflects in considerable part the continuing presence of obstacles to liquidation which did not exist in comparable degree at the time of the earlier break.

During severe price recessions all commodity groups suffer, whether their relative position be strengthened or weakened as a result of the change. Subsequent economic developments, however, are materially affected by the character of the price readjustment occurring during and after such sharp general recessions. The drop of 1920-21 left manufactured goods over-valued, in terms of earlier standards, and raw material under-valued; it left producers' goods under-valued and consumers' goods over-valued; it left agricultural products with low purchasing power, per unit, and non-agricultural products with high purchasing power. The present recession, like that of 1920-21, has materially cheapened agricultural products, raw materials generally, and producers' goods intended for ultimate human consumption. It has enhanced the real value per unit of non-agricultural products and of manufactured goods. Although the figures are not now available, it has certainly increased important elements of manufacturing costs, per unit of product (costs being measured in terms of constant dollars). Finally, it has increased the real value, in terms of other commodities, of processed consumers' goods, a group which has been consistently high-priced during recent years. (These various groups are not, of course, mutu-

ally exclusive). At present prices goods in shape for consumption and use by individual consumers are worth 11 per cent more, in terms of general commodities, than they were in 1913. Highest in price among these goods are non-foods, which have been particularly insensitive to the drop in general prices. These stood in October, 1931, 27 per cent above their 1913 values and 13.7 per cent above their July, 1929, values.

The immediate significance of such changes in prices and in purchasing power is brought out by the following comparison. Between October, 1929, and October, 1931, aggregate factory payrolls, as measured by the revised index of the Federal Reserve Board, declined 47 per cent. The prices of processed consumers' goods, at wholesale, fell 26 per cent during the same period. This means that the volume of such goods that could have been sold to industrial wage-earners if they were buying at wholesale (without change in the proportion of their incomes expended for such goods) declined approximately 28 per cent during this 24 month period. If the cost of living index be used in this comparison, the drop in volume of potential sales is materially greater, amounting to 36 per cent.

The chief problem posed by these conditions is how the flow of goods to consumers is to be maintained, and stimulated, with the real or commodity value of raw materials so low, in comparison with earlier standards, and with the real value of consumers' goods so high. After the depression of 1921 the economic advance was resumed without a complete restoration of pre-war relations among the different elements of the price system. The solution of that problem was facilitated by an extraordinary and unprecedented increase in industrial productivity—an advance of 13.5 per cent in physical output per wage-earner between 1921 and 1923, on top of an increase of 3.0 per cent between 1919 and 1921. The aggregate purchasing power of agricultural producers and of producers of certain other raw materials remained low, but this remarkable gain in industrial productivity with a concurrent growth in physical volume of production, and the marked price advantage enjoyed by manufacturing producers after 1921 permitted a great advance in the aggregate purchasing power of industrial wage-earners and of other groups drawing their incomes from manufacturing industries. The increased purchasing power of these groups and the opening up of new foreign markets more than compensated for the low purchasing power of agricultural producers. These conditions permitted the initiation of revival and the resumption of the movements of goods to consumers in normal volume, even though such goods were relatively high-priced. Today's price situation is that of 1921 in aggravated form. The conditions of economic recovery in the present instance remain to be determined.

On the price side there are three clear-cut alternatives. One is a resumption of activity under existing price conditions, conditions marked, essentially, by relatively high prices to consumers and by relatively low prices for the raw materials on which the incomes of important consuming groups depend. Another alternative is continued liquidation of the prices of manufactured goods, particularly those intended for human consumption, until