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CHAPTER IX

THE PRICE SYSTEM, INCREASING PRODUCTIVITY AND RECENT ECONOMIC CHANGES

THE institution of prices has played a major part in the economic changes of recent years. In an exchange economy individual prices and that intangible entity termed the price structure constitute the controlling agency through which all economic activities are regulated and coordinated. This task of coordination has become more difficult with the increasing complexity of economic life.

Over its long history the institution of prices has been subject to many influences that have enlarged its scope, modified its characteristics and affected its operations. The breakdown of mercantilism and other controls gave a greater degree of freedom to prices and hence of flexibility to the economic system. Later the movement was in the other direction—towards price-fixing and wage control by regulatory bodies and powerful private interests, towards the piling up of fixed expenses in industrial production and the accompanying accentuation of the relatively inflexible elements in selling prices. In the main, these were slow changes, and the modifications they wrought in the working of the price system were gradual. The movements of the last half century, for which price records are more comprehensive, may be traced with more precision. A wide variety of forces has played upon the price system of the United States and upon international price relations over this period. Internal price relations have been altered by shifts in consumer demand, by changes in productive efficiency, by the pushing out of producing mar-

gins, by changes in marketing mechanisms and by other factors that have altered production costs and the selling prices of individual commodities. Of a different order have been those forces that have affected the 'operating characteristics' of the price system. Regulation, private and public controls, the growth of national advertising and consequent increase in the power of manufacturers to exercise direct control over ultimate selling prices, the steadily expanding burden of overhead—all these tend towards the creation of rigid elements and fixed relations in the price structure, with far reaching consequences for the working of the system as a whole. At the same time the price system has been exposed to a series of violent pressures in some degree at least of external origin —War-time inflation, post-War deflation, and the world-wide recession that began in 1929. Pressures from the monetary side, falling with varying incidence upon national price structures, have complicated the price shifts of more narrowly-localized origin. Finally, we must note that international ties were disrupted by non-intercourse during the War and post-War years, by the breaking down of the gold standard and by serious impairment of world trade since 1929. It was inevitable that these various movements should have influenced profoundly the adjustments and correlations that are effected through the price system, and the welfare of great groups of producers and consumers. Our present concern is with these changes and some of their economic consequences.

Expansion of Fabricational Margins, 1913–1936

The outstanding feature of the price history of the last twenty years, as regards internal relations among the prices of various commodity groups, has been the widening of the margin between raw and processed goods—the margin representing fabricational and distributional costs. In essence, all

the price shifts that have been discussed in detail in preceding sections are aspects of this major movement—a movement the more striking because it reverses deep-seated and persistent pre-War tendencies. The low returns and deficient purchasing power of important classes of primary producers in post-War years are related to this movement. The relatively high prices of articles intended for use in capital equipment are due in some degree to high costs of manufacture. The prevalence during the entire post-War period of a plateau of high prices for finished goods intended for human consumption is another aspect of the same situation.

This curious widening of the margin between the prices of raw and manufactured goods is the more remarkable in view of the increasing productivity of labor in manufacturing industries during the last twenty years. From 1914 to 1929 output per wage earner in manufacturing industries of the United States increased about 49 per cent. Yet, while the Bureau of Labor Statistics index of wholesale prices was advancing 40 per cent, during this period, the average selling price of manufactured goods (as derived from Census records) rose 45 per cent. (Fabrication costs plus profits, per unit of product, rose 66 per cent.) The same conditions prevailed among the two groups of manufactured goods that have been given special attention here. Manufactured goods intended for human consumption, for which output per wage earner increased 44 per cent over this fifteen-year period, advanced 44 per cent in per unit selling price. Still greater was the rise in production per wage earner (69 per cent) in the manufacture of goods intended for use in capital equipment, yet here the advance in selling price per unit was 40 per cent, a rise equal to that of general commodity prices, at wholesale.

In following these relations through the periods of recession and recovery we have noted the customary expansion of the margin between raw and processed goods during reces-

sion, as the prices of raw materials collapsed, and the succeeding reduction of the margin with recovery. It is in order at this point briefly to summarize the situation existing in the summer of 1936 and to consider the general nature of the problems then persisting.

In June 1936 the prices of manufactured goods, at wholesale, were 16 per cent below the level of July 1929; the prices of raw producers' goods were 22 per cent below. Relatively to the 1913 base, the price index for manufactured goods was 128, for raw producers' goods 104. Recovery had narrowed the wide margin that developed during the recession but still left manufactured goods in a position of advantage. This margin of advantage amounted to 8 per cent with reference to 1929 relations, to 23 per cent with reference to pre-War parity.

One effect of this change was to reduce the average worth of all raw materials, in exchange for commodities in general at wholesale, to 5 per cent below the July 1929 level and to 10 per cent below the 1913 level. The loss was greatest, relatively, for raw agricultural products. Taking account of values at the farm in relation to retail prices paid by farmers, the average per unit worth of farm products in June 1936 showed net declines of 8 per cent on the July 1929 base, 11 per cent on the pre-War base (the average of the five years, August 1909–July 1914).

Turning now to the June 1936 position of goods intended for use in capital equipment and for direct human consumption, we find the average per unit worth of building materials 31 per cent higher than in 1913. (Worth, or purchasing power, is here measured in terms of commodities in general, at wholesale.) For processed goods intended for use in capital equipment the corresponding gains in real exchange value were 4 per cent, with reference to July 1929, 14 per cent with reference to 1913. For processed consumers' goods

the average per unit worth in June 1936 was 2 per cent greater than in 1929, 8 per cent greater than in 1913. (This means, of course, that the index number of wholesale prices, for processed consumers' goods, stood higher, by these relative amounts, than the general index of wholesale prices.)

We find, therefore, that although some of the greatest disparities created during the recession had been removed by 1936, there remained a net addition to the differences resulting from the divergent price movements of the period 1914–29. Some reasons for this were found in the detailed review of the price changes affecting different commodity groups. In particular, it was noted that although the six-year period of recession and recovery brought an increase approximating 25 per cent in output per man hour, the real per unit worth of manufactured goods (i.e., their exchange value for goods in general) and real labor costs per unit of product increased.

This discussion raises a fundamental question: Did price differences growing out of this expanding margin restrict the effective demand for finished goods on the part of potential buyers—buyers of capital goods, on the one hand, of finished consumers' goods on the other? This question relates not only to the periods of recession and recovery that filled the years 1929–36, but also to the period of expansion that preceded the recession. The answer to this question may not be given in terms of prices alone, for behind prices lie changes in productivity, in costs, in income distribution and in related elements that affect immediately the movements of goods into final use. Indeed, before attempting to answer the central question we must give attention to issues relating to the incidence and effects of increasing productivity. For the whole problem of a changing fabricational margin, with all its possible effects on the status of primary producers, fabricators, buyers of capital equipment and final consumers, centers, in

its recent manifestations, on the incidence of gains in industrial productivity.

On the Incidence and Effects of Gains in Industrial Productivity

As we have followed changes in industrial productivity in this study we have measured productivity in terms of output per man or per man hour. In using such measurements we should be aware of their possible inadequacy. Changes in industrial methods that involve greater use of machinery substitute indirect labor for some part of the direct labor displaced by the machines. That is, men employed in the final operations of manufacture are replaced by machines the production and maintenance of which require human effort. (As regards the production of the machines, this means that some increase in overhead costs is to be expected, when direct labor costs are reduced.) Usually, of course, there is a diminution of the total human energy required for a given productive operation, since the stimulus to the greater use of machines is provided by a potential reduction of costs. But it is certain that the 'per man' or 'per man hour' standard of measurement, applied to the final stage of manufacturing operations, overstates the true gain in productivity, since it does not include a measure of the correlated increase in indirect labor. The measurements of productivity employed in the present study cover a large percentage of all manufacturing operations, including those relating to the production of capital goods, as well as final consumption goods. Thus account is taken of a considerable part of the indirect labor entering into the production of finished goods. Some of the indirect labor, however, is omitted (labor in extraction of minerals for use in capital equipment, and labor entering into some highly fabricated equipment, the output of which

is not readily measured). So, comprehensive as they are, the present measurements of productivity changes probably overstate somewhat the over-all gains in productivity over the periods studied.

But our interest lies at the moment in the reduction of money costs that increasing productivity may be expected to bring. The potential reduction of costs is a reduction, per unit of output, in terms of the scale of costs prevailing prior to a given operating change that enhances industrial productivity. For later, when the advantages of the increased productivity have been realized and the gain appropriated by one party or another, money costs per unit of output may conceivably be as high as before. It is an aspect of this problem—the division or allocation of the money gains resulting from higher productivity—that now concerns us.

The money gains from increased productivity may accrue to producers of raw materials, to fabricators or to consumers. Were competitive conditions such that sellers of raw materials were able to demand higher prices just when lower fabricational costs created a fund open to appropriation, producers of raw materials might conceivably secure the gains. Again, competitive conditions among producers and buyers might be such as to enforce lower selling prices, in which case the buyers of fabricated goods would profit. Or, finally, the situation might make it possible for the agents of fabrication themselves to appropriate the gains, paying no more for raw materials and selling their products at the same prices as before.

In this last situation a further question arises as to the division of the incremental gain among the various claimants here lumped together as 'agents of fabrication'. Manufacturing labor might benefit, through higher pay per unit of goods turned out. Owners of land or other natural resources might be enabled to secure higher rents. Those providing credit,

or funds for capital equipment, might secure higher returns. More might go to governmental units, through higher taxes on the earnings of business enterprises. Or the increased productivity might lead to higher profits, to be distributed as dividends or accumulated as surplus.

Looking first at the physical relations involved in these changes, it is clear that higher productivity will make possible the production of more goods with the same expenditure of effort or the same volume of goods with a smaller expenditure of effort. The latter condition may take the form of an increase in voluntary leisure, or an increase in involuntary unemployment. Which of these results will follow, or what combination of these effects will follow, will depend upon a number of factors.

Various possible effects of gains in industrial productivity, as variously divided, may be suggested in the following summary:

A. Reduction in working hours of men employed, with higher time rates of pay; aggregate disbursements to agents of production and division of disbursements unchanged; selling price unchanged.

Here the gain takes the form of additional leisure. There is no increase in the demand for goods, and no change in the distribution of purchasing power.[1] There is no stimulus to the production of a greater volume of goods.

B. Reduction in the number employed, with higher time rates of pay to those still employed, and no change in aggregate amount disbursed to labor and to other agents of production. No change occurs in selling price.

Increased unemployment, on the one hand, higher per capita returns to employed labor, on the other, will characterize this

[1] With time, as the new leisure changes living habits, a change might occur in the directions in which wage earners' incomes are expended. But the change is remote, and less definite than the other shifts here outlined.

situation. With the higher per capita income of employed labor, some change will occur in the direction in which purchasing power is expended.

C. Reduction in working hours with the same or a smaller force and the same time rates of pay; selling price unchanged.

Here there is no change in the aggregate amount disbursed to the agents of production, but there is a shift in its division. Agents of production other than labor receive a larger proportion of the aggregate, labor receives a smaller portion. Unemployment (or enforced leisure) accompanies the shift. Some modification occurs in the direction in which purchasing power is expended, with the changed distribution of the aggregate disbursement.

D. Reduction in selling prices.

Initial lowering of aggregate receipts and of amount disbursed to agents of production. Possible initial unemployment. Release of buying power of consumers for purchase of more goods of the same type, or other goods. (The direction of expenditures of purchasing power thus released will depend upon the elasticities of demand for the many products in question.)

The central feature of these several situations is that productive energy is released by the gain in productivity. The critical question is whether this released energy is to be utilized and if so, how. In an economy regulated by an omniscient dictator the answer would be simple. There could be more leisure, or the energy could be allocated as the dictator should decide. But where the allocation is effected through the instrumentality of the price system, in an economy marked by prices partly free and partly controlled, the problem is more complex. Here it is the pressure of purchasing power through the price system that gives the answer to the question. For in every situation except that described under (A) above, some shift occurs in the direction in which current purchasing power is expended, after the gain in productivity

occurs. What is of prime importance, in the actual situation, is the kind of connection that may be established between the purchasing power thus shifted and the productive energy released by the increase in productivity.

This connection may be direct, in which case the difficulties attendant upon the economic changes involved are reduced to a minimum. Or, in place of a direct transmission of purchasing power to released energies, there may be an indirect connection and a diffused transmission. At one extreme, representing the most direct connection between purchasing power and released productive energies, is the situation in which the selling price of a commodity is reduced to the full extent made possible by the increase in productivity, and in which the demand for the commodity is highly elastic. In such a situation a large part of the purchasing power of consumers released by the reduction in price would find an outlet through an increased demand for the commodity in question. Increased production would result, with prompt re-employment of all or part of the productive energies released by the initial increase in productive power. At the other extreme is the situation in which no reduction in selling price occurs; full advantage of the reduction of costs flows to stockholders, let us say, in the form of higher dividends. The increased purchasing power of stockholders would find expression through various channels of investment and direct consumption. Most of these channels would be far removed from the commodity in question, and there would be little or no increase in the demand for it. Only by indirection and at long remove would the energies released in the industry first concerned find employment through the slow diffusion of the enhanced purchasing power of stockholders. Under these conditions unemployment might persist in this industry for a long period.

Between these two extremes are many combinations of

price changes and purchasing power shifts, resulting from increases in productivity, and many degrees of diffusion of purchasing power. The rapidity and ease of adaptation to the new productive and distributive conditions created by productivity changes might vary enormously, depending upon the closeness of the connection established between the enhanced purchasing power of particular groups and the productive energies released by improvements in technique and organization.

We should note, however, that in a completely frictionless economy, marked by free prices, with wages and other elements of production costs completely flexible, with labor and capital completely mobile, the enhanced purchasing power of special groups would be diffused promptly throughout the economy and connection would be established without delay between this purchasing power and the released productive energies. Under these conditions the disposition of the gains from increased productivity would be a matter of indifference, in so far as the question of faulty economic adjustments and persistent unemployment of productive facilities is concerned. For maladjustments, marked by unemployment, could not be present. (The manner in which the fruits of higher productivity were apportioned would be important, of course, as regards the status of different economic groups; that matter is not here in question.) In an economy marked by frictions of many types, however--by rigid prices, inflexible rates for services of many sorts, immobility of labor and capital—innumerable barriers stand in the way of the wide and prompt diffusion of purchasing power. The pressure of new purchasing power in one segment of the economic system may exert a negligible effect on displaced labor and idle capital in a remote section, within time limits that have significance for ordinary human activities.

This, of course, is the situation we face today. Frictions

there have always been in the economic systems with which men have actually worked. As frictions of some types disappeared, new frictions have developed. The twentieth century has witnessed many new encroachments upon the ideal freedom of the competitive system. Accordingly, the manner in which the gains resulting from higher productivity are apportioned is not a matter of indifference, as regards the efficiency of the economic system and the maximum utilization of productive resources. For the gains of enhanced productivity are potential gains, merely. In their first form they appear as reductions in the energy necessary to produce stated quantities of goods. Unless the benefits of the released energy are realized, no true advances occur. For this reason, the apportionment of the potential benefits of higher productivity is of high social concern. The more direct the connection between enhanced purchasing power and productive energy released by new techniques, the less the maladjustment and the more efficient the utilization of the new techniques. The less direct the connection, and the more diffused the transmission of new purchasing power to released productive energies, the greater and the more protracted are the resulting disturbances likely to be.

Division of the Gains in Industrial Productivity: The Historical Record, 1899–1933

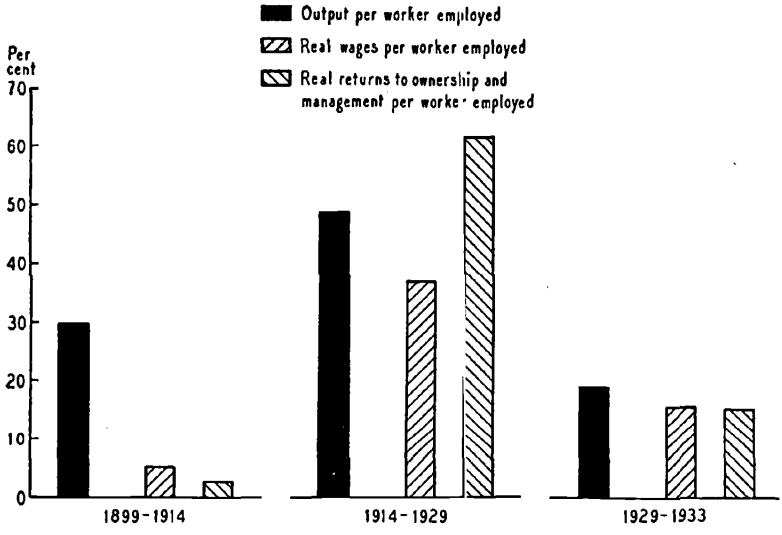
With this argument in mind we may review the changes of recent years against a background of earlier movements. We shall attempt to trace the incidence of changes in industrial productivity, by estimating the concurrent changes in the returns of fabricators and in the real costs of manufactured goods to various classes of buyers. The assumptions made and the limitations attaching to the measurements will be noted in the course of the discussion.

SHARES OF PRODUCERS

We first note the changes in manufacturing productivity, measured with reference to the number of workers or of man hours worked, and the returns to fabricators, during three periods. These measurements appear in the accompanying table. They are shown graphically in Figure 15.

FIGURE 15

ESTIMATED CHANGES IN INDUSTRIAL PRODUCTIVITY AND IN THE RETURNS OF MANUFACTURING PRODUCERS, 1899–1933



Measurements relate to average costs per unit of goods produced and bought

During the fifteen years preceding the War output per worker employed in manufacturing plants increased almost 30 per cent. With this we may compare the real returns, per worker employed, of wage earners and of ownership and management. Changes in these real returns are estimated

CHANGES IN PRODUCTIVITY AND THE FORTUNES OF MANUFACTURING PRODUCERS

	1899–1914	*1914–1929*	*1929–1933*
		(percentage)	
Change in output per worker, or per man hour worked [1]	+29.6	+48.6	+19.0
Change in real returns, per worker employed, or per man hour worked,[1] of			
Wage earners, manufacturing plants	+4.8	+36.9	+15.5
Ownership and management, manufacturing plants	+2.2	+61.5	+15.2
All agents of fabrication	+2.8	+51.3	+15.4

[1] For the periods 1899–1914 and 1914–29 the figures are all on the basis 'per worker employed'. This is a faulty standard of reference, to the extent that average working hours changed over these periods. Information concerning hours of labor during these periods is scanty. Estimates by Douglas (for the first period) and by Wolman and the National Industrial Conference Board (for the second period) indicate that average full time hours of work, in manufacturing industries, declined about 6 or 7 per cent between 1899 and 1914 and from 6 to 8 per cent between 1914 and 1929. From these figures, and scattered evidence of other types, we may estimate, roughly, that output per man hour increased from 35 to 38 per cent between 1899 and 1914 and from 50 to 60 per cent between 1914 and 1929. (The National Industrial Conference Board has published an estimate of 55 per cent, for the increase in output per man hour from 1914 to 1929; see *Thirty Hour Week*, 1935, p. 17.) But these figures, at best, are approximations. It seems well to use measurements of output per worker for the period prior to 1929, remembering that these understate the true gains in productivity. For the period 1929–1933, when working hours were subject to more extreme variations, and for which we have more accurate measurements of such changes, a man hour of work is the unit of reference.

The figures in this and the following table are given to one decimal place, for the purpose of formal consistency. The margin of error is, of course, greater than this.

The present estimate of change in output per man hour from 1929 to 1933, which is based upon data relating to a large and representative sample of manufacturing industries, differs somewhat from other estimates issued by the National Bureau (see *Bulletins 53* and *58*).

by dividing the aggregate monetary returns of the two groups by the number of wage earners employed, and deflating the measurements thus secured by appropriate indexes of

the prices of goods for which the money returns of the two groups are spent.[2] The comparison for the pre-War period shows only slight gains in the real rewards of these two groups of producers. The gain of wage earners, per capita, amounted to 4.8 per cent; for ownership and management, per worker employed, 2.2 per cent; and for the combined groups, 2.8 per cent. These fall far short of the gain of 29.6 per cent in output per worker. The gains of enhanced productivity, between 1899 and 1914, went, in the main, to groups other than the agents of fabrication.

Over the next fifteen years, 1914–29, output per worker increased 48.6 per cent. The fruits of this notable advance went largely to fabricators, as is clear from the other entries for this period. The real rewards, per capita, of manufacturing wage earners, advanced 36.9 per cent, while for ownership and management the gain, per worker employed, amounted to 61.5 per cent. For the combined groups the gain was 51.3 per cent. The fact that 1914 was a year of depression, while 1929 was one of prosperity, accounts in part for this substantial gain which exceeded the rise in productivity. But as to the reality of the gain there is no question. Producing groups in manufacturing industries

[2] The deflator, for wage earners, is the index of cost of living for industrial workers. For the ownership and management group (a mixed class of salaried workers, shareholders, bondholders, and other miscellaneous claimants) the deflator is an index secured by averaging index numbers of living costs (with a weight of 2), wholesale prices (weight of 2) and the prices of finished capital goods (weight of 1). The two indexes are combined, in securing the measurements for all agents of fabrication, with weights based on the importance of each group. These deflators are to be considered only as rough approximations to the desired measurements.

	1899	*1914*	*1914*	*1929*	*1929*	*1933*
Deflator for						
Wage earners	100.0	136.3	100.0	170.1	100.0	76.2
Ownership and management	100.0	128.5	100.0	158.3	100.0	74.1
All agents of fabrication	100.0	131.9	100.0	163.5	100.0	74.9

gained greatly in their market relations between 1914 and 1929. Payments for the services they rendered, measured, for convenience, on a per worker basis, increased much more rapidly than did the cost of the goods they bought.

Recession and depression brought an advance of some 19 per cent in output per man hour worked. The rewards of manufacturing labor, and of ownership and management, computed on a man hour basis, show gains approximating 15 per cent. Total returns declined substantially, of course, but for each man hour of work agents of fabrication scored appreciable advances during the period of decline. These gains fell only slightly below the increase in productivity.

It appears that manufacturing producers shared but slightly in the rewards of the pre-War advance in industrial productivity. The fruits of the great advance of the next fifteen years went largely, however, to agents of fabrication, particularly to the mixed group classed as 'ownership and management'. During recession and depression, also, the rewards of these groups, per man hour worked, advanced only slightly less than did output per man hour.

SHARES OF CONSUMERS

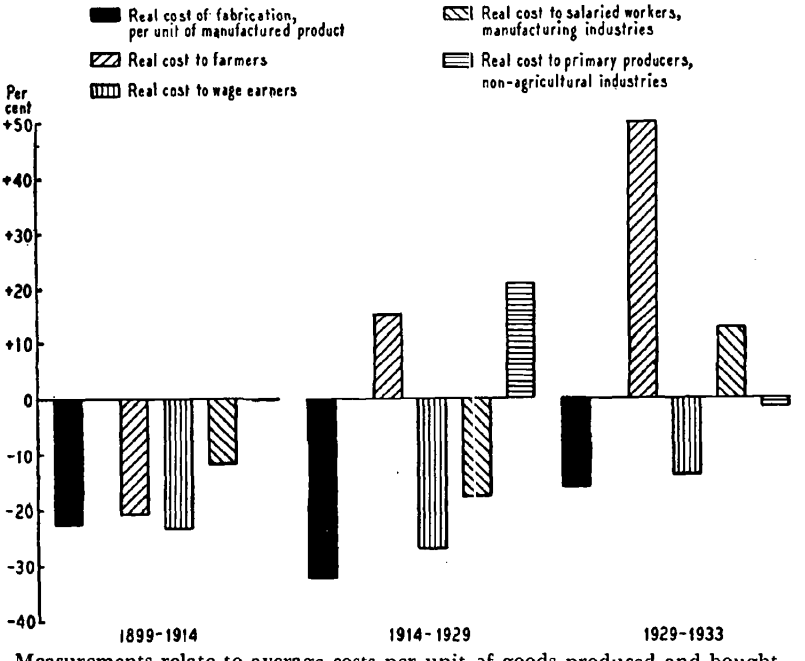
To complete the picture we turn now to the side of the consumer. We lack data for many consuming groups but we may estimate with reasonable accuracy the changes affecting three or four important classes. In measuring the cost to these consumers of the services of fabricators we take account only of manufactured goods intended for human consumption. These are not finished consumers' goods, for we do not have adequate material for completely finished goods, but changes in fabricational costs of goods ultimately to be consumed are, in fact, the movements that concern us. Decreases in the per unit costs of fabrication, for such goods,

to selected groups of buyers may be compared with changes in the real costs of fabrication of manufactured goods in general, resulting from increases of industrial productivity. The accompanying measurements, which are portrayed graphically in Figure 16, define these changes. The figures are to be taken as approximations since available data do not make possible complete accuracy in the tracing of these movements.

The measurements in the first line of the tabulation, which define (approximately) changes in the productive effort re-

FIGURE 16

ESTIMATED CHANGES IN REAL COSTS OF FABRICATION TO MANUFACTURING PRODUCERS AND IN CORRESPONDING REAL COSTS OF MANUFACTURING SERVICES TO VARIOUS CONSUMING GROUPS, 1899–1933



Measurements relate to average costs per unit of goods produced and bought.

CHANGES IN MANUFACTURING PRODUCTIVITY AND THE FORTUNES OF CONSUMING GROUPS[1]

	1899–1914	*1914–1929*	*1929–1933*
		(percentage)	
Change in real per unit cost of fabrication, in effort expended by producers	—22.8	—32.7	—16.0
Change in real per unit cost of fabrication to buyers of goods intended for human consumption			
Farmers	—20.9	+15.2	+50.1
Wage earners, general	—23.4	—27.1	—13.8
Salaried workers, manufacturing	—11.8	—17.6	+12.5
Primary producers, non-agricultural	—0.1	+20.9	—1.5

[1] The figures in this table require some explanation. The index numbers in the first line, measuring changes in the 'real cost of fabrication' are the reciprocals of the measurements of productivity. Thus in place of Q/N (total output divided by number of workers) we have N/Q (total number of workers divided by number of units produced). If we accept N as a measure of the aggregate effort expended in manufacturing production, N/Q will measure the effort per unit of goods produced. The defects of Q/N as a true measure of industrial productivity are present also in N/Q. N does not measure all 'real productive effort'. It is defective in that non-wage earners are not included, and also in that some of the effort embodied in capital equipment is excluded. It may be assumed, although the assumption is not altogether justified, that although N does not include all types of productive effort, other types vary with N. Noting its defects, we may use N/Q as a rough index of changes in actual productive effort per unit of manufactured goods produced. (For the last period the index is based upon $\frac{NH}{Q}$, total man hours divided by number of units produced.)

The money cost, to buyers, of the contribution of fabricators to one unit of manufactured goods is given by VA/Q, that is, total value added by manufacture divided by number of units. (In the present case, only goods intended for human consumption are included.) In measuring the real cost to farmers, the money cost of fabrication, per unit, is 'deflated' by an index of the prices received by farmers for their products. In measuring the real cost to wage earners, the money cost of fabrication, per unit, is 'deflated' by an index of hourly rates of pay. The market values of the services of salaried workers are measured in terms of average annual income. Average wholesale prices of non-agricultural raw materials furnish the standard used for primary producers other than farmers. In each case changes in the

money cost are reduced to changes in 'real' cost by means of an index measuring changes in the money price of the goods or services sold by the consuming group in question.

Here, as in dealing with the fortunes of producing groups, we are dealing only with approximations to the actual values desired. The measurements of changes in the realized returns of fabricators may not measure precisely changes in the per unit cost of fabrication, as paid by the several consuming groups. Distributional margins may vary. Again, we only approximate changes in the actual effort expended by various consuming groups, in securing the funds with which manufactured goods are to be purchased. The productivity of labor in farming, for example, may vary with time. But for the purpose of estimating the general nature of broad movements, these approximations may be utilized.

quired to manufacture one unit of goods, provide a standard with which may be compared measurements of the changing real costs of fabrication, per unit of product, to various classes of buyers of goods intended for human consumption. During the period 1899–1914, when fabricators, as producers, were gaining but slightly from the increases in industrial productivity, the cost to farmers and wage earners of fabricators' services was dropping sharply. Per unit of product bought, the real cost of these services to farmers declined 21 per cent, to wage earners 23 per cent. These reductions were about equal to the decline in effort expended in fabrication, as a result of advancing productivity. Salaried workers gained also, but primary producers other than farmers received no share of the advances in industrial productivity.

In the period 1914–29 the productive effort required to fabricate a unit of manufactured goods dropped more than 32 per cent. None of this gain accrued to farmers or to other primary producers. Wage earners in general and salaried workers in manufacturing industries, as consumers, gained materially, however. Their pay for efforts expended increased, and the real cost to them of manufacturing services dropped appreciably. The wage earning group here represented is broader than the manufacturing wage group, but the nar-

rower group enjoyed a similar gain. Both as producers and as consumers industrial workers gained over this period.

During the four years from 1929 to 1933 industrial productivity continued to increase; the real per unit cost of fabrication was reduced 16 per cent. On the producing side wage earners and ownership and management gained, in that their monetary rewards, per man hour worked, increased in purchasing power. (Of course, these two groups lost materially in the aggregate, through the reduction in total hours worked.) Among consumers farmers lost heavily. The selling prices of their products dropped so sharply that the real cost, in kind, of the fabricational services embodied in a unit of manufactured goods increased 50 per cent. Salaried workers lost also. Producers of non-agricultural raw materials gained slightly, but the greatest gain was scored by wage earners. An hour of labor, in 1933, would buy 16 per cent more in manufactured goods than in 1929.[3]

[3] These measurements relate only to the cost of fabrication, not to the total selling price of manufactured goods. This limitation is necessary, since the productivity measurements are restricted to manufacturing operations. However, the actual cost of manufactured goods to final buyers includes the cost of materials, and distributive costs, as well as fabricational costs. Data now available do not cover distributive costs, but we may estimate changes in the real cost, to various consuming groups, of manufactured goods intended for human consumption, taking account of material costs as well as fabricational costs. Following are measurements corresponding to those given, for fabricational costs alone, in the tabulation in the text above.

	1899–1914	*1914–1929*	*1929–1933*
		(percentage)	
Change in real per unit cost of fabrication and materials to buyers of goods intended for human consumption			
Farmers	—16.5	—0.1	+33.0
Wage earners, general	—19.1	—36.8	—23.6
Salaried workers, manufacturing	—7.0	—28.6	—0.3
Primary producers, non-agricultural	+5.5	+4.8	—12.7

When we take account, as we do here, of the actual selling prices of

In attempting to measure changes in the real costs of fabricators' services we have dealt with specific groups of consumers for whom records are available of changes in the prices of the goods or services from which their incomes are received. These are, of necessity, scattered groups, and do not include all consumers. We may supplement the preceding account with a brief survey of changes in prices and costs expressed in dollars of constant purchasing power, at wholesale. (That is, each price or cost index has been divided by an index of general wholesale prices.) This procedure does not provide true measures of changing real costs to consumers, since consumers do not buy at wholesale prices, nor are changes in their rewards, for efforts expended, accurately measured by changes in wholesale prices. But the comparison does provide general indications of the changing real worth of manufactured goods and of the services of agents of fabrication in terms of a broad list of commodities at wholesale. The measurements on page 451 define these changes.

These figures are estimates, but the margin of error is far smaller than the wide movements they measure. The shifts are striking. A decline of some 23 per cent in the per unit cost of fabrication (in human effort) over the fifteen years prior to the War was paralleled by a drop of 10 per cent in the average worth of manufactured goods intended for human consumption, of 14 per cent in the average per unit cost, to ultimate consumers, of the services of fabricators. There was some concurrent gain, not here shown, in the rewards of raw material producers. But a large portion

manufactured goods the apparent savings of consumers during the first period are reduced, those of the second and third periods are increased, in comparison with the changes in fabrication costs alone. The reason, of course, is that raw material prices rose more than prices in general during the pre-War period, but fell below general prices in the succeeding periods.

	1899–1914	*1914–1929*	*1929–1933*
		(percentage)	
Change in real per unit cost of fabrication in effort expended by producers[1]	—23	—33	—16
Estimated change in average per unit worth of manufactured goods intended for human consumption (worth measured in dollars of constant purchasing power, at wholesale)	—10	+3	—8
Estimated change in average cost of fabrication, to consumers, per unit of manufactured goods intended for human consumption (cost measured in dollars of constant purchasing power, at wholesale)	—14	+19	+2

[1] Industrial productivity, with reference to which these measurements of changing fabrication costs are estimated, is measured in terms of output per wage earner for the periods 1899–1914 and 1914–29, output per man hour for the period 1929–33.

of the gains from increased productivity was passed on to consumers in the form of lower prices. Production expanded, employment opportunities increased, and labor displacement was kept to a minimum.[4] Over the fifteen-year period from 1914 to 1929 there was a net reduction of approximately 33 per cent in the real cost of fabrication. This exceeded the considerable savings of human energy during the pre-War period. Yet the average selling price of manufactured goods in 1929 was some 3 per cent higher, in dollars of constant purchasing power, than in 1914. In spite of the tremendous gain in productive efficiency in manufacturing industries, buyers of manufactured goods were forced to give more for them, in commodities at large, than in 1914. The final entry for this period indicates who actually gained from the in-

[4] Industrial displacement during this period is discussed in *Economic Tendencies* (pp. 419–23). From 1899 to 1914 only one of every 48 men employed withdrew from or was forced out of the industry in which he was working, over each five-year census period. (The figure given is an average, of course.)

crease in productivity. Although productive efficiency went up, the per unit cost to consumers of the services of agents of fabrication showed a net advance of some 19 per cent. A substantial portion of the gains from increased productivity during the post-War period was reaped by agents of fabrication. Indeed, since the prices of fabricated goods advanced, in relation to general commodities at wholesale, it would appear that agents of fabrication gained more than the rewards of increased productivity, actually encroaching upon the incomes of other economic groups.

Tendencies of the same sort persisted during the years of recession from 1929 to 1933. Productivity continued to increase, and real fabrication costs were reduced approximately 16 per cent. Average per unit selling prices of goods intended for human consumption were reduced, in terms of constant dollars, but by only half the apparent decline in real fabricational costs. That this drop was due to declining material costs is revealed by the final entry in the table. The cost to consumers of fabricators' services, per unit of consumption goods produced, advanced 2 per cent during this period of recession, in spite of the increase in productivity.[5]

[5] Certain important qualifying considerations should be noted. The figures cited are fully accurate, as measurements of the changing rewards of fabricators, only on the assumption that fabrication played the same role in production in the different years compared. It is assumed, in other words, that no change occurred in the *quality* of manufactured goods, as a result of more refined fabrication. Such quality changes did occur. The average finished product of 1933 represented more 'units' of fabrication, fewer 'units' of raw materials, than did the average finished product of 1914. However, these quality changes do not explain the notable shift in the relative rewards of fabricators. Detailed study of the records of individual manufacturing industries reveals a general advance in fabricational costs, not compensated by corresponding changes in quality. If full account could be taken of quality changes the apparent gains of fabricators from 1914 to 1933 would be lessened, but by no means reversed.

Again, our conclusions are restricted by the assumption that the actual

The survey of productivity changes in manufacturing industries and their incidence between 1899 and 1933 has yielded the following general conclusions:

The increase of 30 per cent in productivity from 1899 to 1914, and the corresponding decline of 23 per cent in the productive effort required to fabricate a unit of goods, benefited consuming groups. Agents of fabrication, as producers, secured only a small portion of these gains.

The increase of 49 per cent in productivity from 1914 to 1929, and the corresponding decline of 33 per cent in productive effort required to fabricate a unit of goods, worked largely to the advantage of producing groups. A substantial portion of the total gain in productivity was secured by manufacturing wage earners, as producers, while ownership and management scored gains actually exceeding the advance in productivity. Wage earners and salaried workers, as consumers, also benefited, but consum-

effort of production may be measured in terms of number of men employed or of man hours of labor expended. This would be accurate if we could take account of all the *indirect labor* embodied in capital equipment. This is done only in part in the measurements here employed. Because some of the capital goods used in production embody labor not included in our measurements, the actual advances in productivity and the actual reductions in productive effort expended on each unit of goods were probably somewhat smaller than those here indicated.

In assessing the gains ot labor no account is taken of displacement and unemployment, resulting from technological change. We have attempted to define changes in the real rewards secured per worker or per hour of labor, not variations in the aggregate rewards of labor as a class. For the purpose of the present analysis it is proper to measure real rewards in terms of a man or a man hour unit.

Finally, the index numbers used in the deflating process, in attempting to measure changes in the real rewards of both producing and consuming groups, are not exact instruments. A margin of error which we may not precisely define is present in using them for the purpose of shifting from the money level to the commodity level of contributions and rewards. Here, as in other respects, the instruments used provide approximations to the desired results rather than definitive measurements. It is improbable, however, that closer approximations would reverse the essential features of the movements recorded in the text.

ing groups drawing incomes from the sale of primary products actually experienced advances in the real costs of the manufactured goods they purchased. (If account could be taken of the gain in productivity in agriculture and mining over this period the position of primary producers in 1929, relatively to 1914, would be more favorable than the present figures indicate.)

The increase of 19 per cent in output per man hour from 1929 to 1933, and the corresponding drop of 16 per cent in the productive effort required to fabricate a unit of goods, worked chiefly to the advantage of producers. Wage earners, as consumers, gained also, since hourly rates of pay were maintained, but no other consuming group among those here dealt with shared appreciably in the cost reduction. Farmers were forced to meet a very great advance in the real costs, to them, of fabricating services on the goods they purchased.

Certain rather important reservations attaching to these various measurements have been suggested in preceding pages. Correction for possible errors involved, if they could be made, would doubtless change the measurements somewhat, but it is unlikely that our conclusions concerning the general movements of the periods covered would be materially modified. Over the thirty-four years here reviewed the productivity of manufacturing industries increased steadily; indeed there is evidence of acceleration. But the gains resulting from advancing productivity were allocated in quite different ways in the several periods reviewed. The essential fact is that prior to 1914 the major share of the benefits of higher productivity and declining real costs of fabrication went to consumers; thereafter the chief shares went to producing groups—to wage earners, ownership and management.

The reasons for this striking shift in the incidence of increasing productivity can not be fully established, but certain of the major factors may be briefly suggested.

The pre-War period was marked by a general and sus-

tained advance in commodity prices. During the later period, following the sharp War-time advance, a considerable net decline in prices occurred. Labor costs and overhead charges, which are important elements of the fabricational margin, tend to lag behind the level of wholesale prices. Accordingly such costs, as a percentage of selling price, tend to decline when the trend of prices is rising, to increase when the trend is declining.

During the War a strong stimulus was given to the production of raw materials outside Europe. When the special needs of the War passed and when European countries returned again to full productive activity, raw material producers were in a weak market position. The decline in the prices of primary products strengthened the relative position of fabricators. Price weakness among primary producers persisted during a large part of the post-War decade and during the latest recession. This weakness and the relative strength of fabricators contributed to the change noted in the division of the total value product of manufacturing industries.

The restriction of immigration into the United States strengthened the bargaining position of American labor in the War and post-War years. This was accompanied by a fairly general change in the attitude of large employers on the wage question. The principle of maintaining purchasing power through high wages was widely endorsed. Acceptance of this principle was partly responsible for the increase in the share received by manufacturing labor in the fruits of advancing productivity.

During the first post-War decade consumer demand was heavily supported by important non-recurring elements. A greatly expanded reservoir of credit was drawn upon to finance the increase in installment purchasing. Speculative profits, reaped in securities and real estate markets, were in part used to purchase consumption goods. Lending abroad

on a large scale supported heavy foreign purchases. With demand thus strengthened it was easier for the sellers of manufactured goods to maintain the fabricational margin and the selling prices of manufactured goods, even though productivity was increasing and costs of production were declining.

We may think of the gains of industrial progress through advancing productivity as being divided through a three-cornered pulling and hauling contest among primary producers, agents of fabrication and consumers. In pre-War years primary producers and consumers stood in positions of relative advantage and reaped most of the benefits of rising productivity. The tide turned with the end of the War. Primary producers lost bargaining power; the trend of prices and special post-War circumstances contributed to strengthen the position of fabricators. Among consumers, primary producers were in a weak position. The buying power of other important consuming groups was artificially bolstered, so that competitive pressure on the demand side, towards lower prices, was greatly weakened.

Industrial Productivity and Economic Frictions

The preceding pages have dealt with a variety of changes that occurred during the War, the post-War expansion and the recent years of recession and recovery. The adverse fortunes of primary producers, the expansion of fabricational margins and the increased returns of fabricators, the persistence of relatively high prices for many types of finished consumers' goods and of capital equipment—these have been characteristic of the entire period since the War and stand in notable contrast to the conditions and tendencies prevailing in the United States during the several decades before the War. Coexistent with these conditions we have noted a

steady increase in industrial productivity in manufacturing industries; unemployment that prevailed even under conditions of general prosperity, that reached extreme proportions during the depression and persisted with exceptional obstinacy during recovery; the prevalence of inflexible prices and of other economic rigidities that constitute important sources of friction in the continuing processes of adaptation to changing economic circumstances.

Many forces lie behind these phenomena. We should unduly simplify a situation into which many variables enter and in which causal connections run in diverse directions if we should seek a single explanation of the conditions discussed in this study. Yet something of a unifying principle is to be found in the relations traced in this chapter. Changing productivity and its diverse incidence, on the one hand, economic frictions that impede prompt adaptation to such changes, on the other, bulk large among the complex of factors responsible for the spotty prosperity, the persistence of unemployment and the shifts in price relations and in the distribution of purchasing power that have characterized recent years.

Changes in technology and related variations in industrial productivity are perhaps the chief dynamic element in modern economic systems. Such changes are continually occurring; recently they have been of exceptional magnitude. Their direct effects and repercussions are felt over a wide range. They involve substantial alterations in the manner in which productive resources are used, in the demand for labor, in production costs and prices and in the current distribution of purchasing power. But the incidence of these changes is subject to alteration. The character of demand for the products of the industries affected, the nature of the change in productivity and the strategic power of the producing and consuming groups directly concerned influence the immedi-

ate results of an increase in productivity. So far, however, it remains a somewhat narrow problem. Our social attitudes and immediate economic interests, as individuals, may give us reasons to be concerned with the effects of given changes in productivity. So long as these are restricted to the groups immediately involved in particular technical or organizational improvements the working of the economic system as a whole is not affected. But because we do not have a perfectly flexible price system and fluid factors of production, the repercussions of changes in productivity have general significance and are of high importance in the study of economic processes at large. When institutional conditions give rise to serious frictions and delays in the adaptation of the elements of an economy to changes in productivity, when the operations of the entire system are adversely affected, then such changes cease to be of narrow and specialized interest only.

In preceding pages emphasis was placed upon the role of points of diffusion, centers from which the effects of changes in industrial productivity were diffused throughout the price and distributive system. In a frictionless, fluid economy these effects would be as quickly transmitted from a few points of diffusion as from many, and there would be prompt and immediate adaptation to them. But when frictions are present the number of points for the dissemination of the effects of changes in productivity becomes of prime importance. With many points of diffusion the influence of particular frictions would be lessened, and prompt utilization of released energies, human and other, would be expected. With few points of diffusion (as when restricted groups secure the first advantages of higher productivity) only a remote connection would exist between the new purchasing power accruing to particular economic groups and the energy released by advancing productivity, and the obstacles to prompt utilization of these energies would be many. The frictions and impedi-

ments characteristic of a modern money economy would impede the rapid spread of purchasing power shifted from its original channels.

Of course, many evidences of prosperity may be present even though gains in productivity are not reflected in lower fabricational margins and reduced prices of finished goods. Wage rates and the aggregate earnings of labor employed in manufacturing industries may be high.[6] Corporate earnings may be large and the prices of securities may rise to high levels. Indeed, the high fabricational margin made possible by productivity gains not passed on to consumers may conduce to just these conditions. But when the advantages of higher productivity find this outlet, prosperity may for long periods be limited to special groups. The rewards of primary producers may remain low, relatively to the prices of finished goods. Volume of sales and of production may remain low, in comparison with productive potentialities and the needs of consumers at large. Unemployment will persist in large volume. Industry will be burdened with high overhead charges, because of the high cost of finished capital goods.

Ultimately, as the new purchasing power of favored groups slowly diffuses through the economy, a higher level of activity is to be expected unless further complications intervene. Yet such complications may occur, giving rise to a semi-permanent condition of concurrent prosperity among some economic groups, unemployment and persistently low returns to other groups. It is conceivable, under modern conditions, that portions of the increased income of the favored groups may never become effective in stimulating the productive energies released in the first instance by the gain in produc-

[6] The part that wage payments in manufacturing industries play in the buying activities of consumers at large is indicated by the fact that in 1929 such wages constituted 14 per cent of the national income paid out; in 1933 the corresponding percentage was 11.

tivity. A loan abroad, expended in foreign markets and ultimately disavowed by the borrower, exemplifies such a development. Far more important as a cause of continuing maladjustment of this type is the mere persistence of technological improvement, with new gains displacing workers in one section while the frictions of a modern economy impede the diffusion of the augmented purchasing power of favored groups in other sections.

Precisely this condition has characterized the post-War economic scene. Industrial displacement and technological unemployment were in evidence prior to the recession of 1929.[7] The whole post-War situation, marked by high fabricational margins, high prices to consumers, high prices to buyers of capital goods, relatively low rewards to primary producers, is related to this basic fact. The gains of higher productivity were reaped, in the main, by particular groups, occupying strategic positions.[8] Because of the many frictions

[7] In each of the three biennial census periods from 1923 to 1929 one man out of 20, on the average, withdrew from or was forced out of the industry in which he was working. This was more than double the separation rate prevailing over census periods more than twice as long, prior to the War. The separation rate increased greatly, of course, from 1929 to 1933.

[8] Confirmation of this statement is found in the rapid growth of profits, the large additions to corporate surpluses and the high post-War level of real wages in industrial enterprises (see *Economic Tendencies,* pp. 416–528). The following figures reveal more sharply the relative gains of wage earners. The industries here represented (commercial and savings banks, mining, manufacturing, construction, railroads, Pullman and express, water transport, street railways, telephones and telegraphs, private electric light and power companies) extend beyond the industrial sphere, but the general tendencies we have discussed are clearly shown by the composite figures. The averages given have been computed from annual data cited by M. A. Copeland ("National Wealth and Income—An Interpretation", *Journal of the American Statistical Association,* June 1935, p. 384).

	1909–13	*1919–23*	*1924–28*	*1929–32*
Aggregate pay rolls as a percentage of total realized income, banks and non-farm industries	72.3	82.4	79.9	77.0

(*Footnote* 8 *concluded on p. 461*)

present in the post-War world, the process of diffusion, by which the higher purchasing power of these groups was brought into contact with the productive energies released by advancing industrial efficiency, was protracted. Persistent maladjustments, the most obvious of which was industrial unemployment, were the outward manifestations of this condition. Special circumstances in the form of fortuitous additions to the current income of consumers at large lessened, for a time, the adverse effects. With the removal of these circumstances, and under the pressure of other forces during recession, the maladjustments became pronounced from 1929 to 1933.

The character of these maladjustments and the changes during the recovery from 1933 to 1936 were discussed in preceding chapters. This recovery has been fairly broad, in its effects on economic groups. Price disparities have been reduced, the incomes of primary producers have been raised, wage rates have advanced in manufacturing industries and volume of employment has increased somewhat. Yet in spite of these gains it cannot be said that prosperity is general in 1936, or that the benefits of recovery have been evenly apportioned. Unemployment persists in great volume; the aggregate volume of industrial production has barely touched

(Realized income is total income, excluding additions to corporate surplus. The groups included accounted for about 40 per cent of the total realized income of the country in 1929.)

The proportion of realized income going to wage earners in these industries advanced markedly over the decade 1909–13 to 1919–23. Some decline occurred thereafter, but even the depression years witnessed a higher average ratio of pay rolls to realized income than prevailed prior to the War. We should note, too, that other portions of the fabricational margin were expanding precisely when the pay roll percentage declined after 1923. Profits rose markedly from 1923 to 1929, and overhead charges expanded relatively, from 1929 to 1932. The entire post-War period was marked by relatively high disbursements to income recipients deriving their rewards from the fabricational margin.

the level of 1926, although the decade has brought an increase of about eleven million in the population of the United States. The rewards of primary producers remain relatively low, if we exclude special benefits not arising from productive operations. Fabricational costs are high, wage rates are high and profit rates are advancing. The fundamental requirements of a large volume of general production and a rate of activity that will absorb the industrial unemployed have not been met.

The situation, it has been here suggested, is related to three basic characteristics of post-War economic conditions in the United States. First, industrial productivity advanced notably. From 1929 to 1936 the productivity of manufacturing industries in the United States showed an apparent increase of some 25 per cent. This figure could be substantially reduced to allow for possible errors but it would still represent a notable advance in the efficiency of industrial enterprise. Second, the chief immediate gains of this great advance were reaped by the fairly restricted groups directly engaged in manufacturing operations, that is, by manufacturing labor and the managers and owners of manufacturing plants. Primary producers and the great body of general consumers shared in only a limited degree in the fruits of higher productivity. (Certain industries constitute exceptions to this general condition.) Finally, this whole post-War period was marked by economic frictions that retarded the necessary adaptations to industrial change. Inflexible prices, relatively fixed overhead charges, private control, governmental regulation and other obstacles to the fluidity of productive agents—these were not new to the post-War scene but they played important parts in the developments of the last fifteen years. The first of these three conditions meant that the flow of current purchasing power was being altered and that productive energies were being released from their accustomed

applications. The second meant that the accretions to the purchasing power of the first beneficiaries of increased productivity were being diffused from a limited number of points, since primary producers and consumers at large shared but slightly in the first gains. The third condition, combined with the second, meant that adaptation and readjustment to the changed conditions would be slow, that effective connections between accretions to purchasing power and released productive energies would be tardily established. Relatively wide fabricational margins, relatively high prices of finished goods, spotty prosperity, persistent unemployment and subnormal production are related to these three basic conditions.

The technical changes, organizational improvements and advances in individual aptitudes and skills that increase productivity will continue. The forces that have brought such advances in the past show no signs of weakening. Moreover, economic frictions will persist. The free, flexible system under which immediate adjustment to changes in operating conditions could be effected never existed, in reality. Economic forces proper have tended to create new frictions, as earlier rigidities have broken down. Frictions of other types are generated when social considerations are given precedence over considerations of private gain. We must look forward to a continuation of the conditions under which changing productivity, on the one hand, and persistent frictions, on the other, play central roles in the processes of economic life.

The effects of these conditions on the working of the economic system as a whole will depend on the degree of friction that prevails and on the manner in which the gains of enhanced productivity are first apportioned. Economic frictions will persist, but their growth may perhaps be curtailed. If adequate social justification should be required for every source of continuing economic friction, restrictions and

disturbances that do not pay their way in social returns might be reduced, with a resulting increase in the efficiency of economic operations. This is not a suggestion that competition should be unrestricted, or that public regulation should cease. There is ample social justification for many of the controls that exist today. It is probable, however, that many of the price inflexibilities and other obstacles to the prompt readjustment of economic relations that industrial change necessitates arise from faulty policies in business administration and labor organization, monopolistic and semi-monopolistic 'pockets' in the competitive system, needless rigidity in rate regulation, attempts at control that outrun our knowledge of the forces and relations involved. True, we do not have a fully competitive system, and the currents of social change seem to be moving us further away from such a system. But in noting the many restrictions upon competition we must not overlook the wide areas over which fairly effective competition prevails. Our economic fortunes and our living standards depend upon the working of a system still essentially competitive, and in our appraisal of economic ills we must recognize this fact. Until we have the knowledge and the power necessary to a broader type of economic planning and control than we have yet attempted, we must depend upon essentially competitive forces for the regulation of economic processes at large. If, under these conditions, the advantages of increasing industrial productivity are to be widely shared, and if increases in productivity are not to be allowed to cramp and retard the operations of the productive system, restrictions upon the piling up of socially unnecessary frictions, whether of private or public origin, may be desirable.

In the main, however, it is not to a lessening of economic frictions that we may look for escape from the difficulties we face in seeking to avoid the losses and secure the gains of

advancing productivity. In a system inevitably restricted by necessary public regulation and by the operating conditions of private industry, perhaps the chief means of minimizing these difficulties is the immediate spreading of industrial gains over the widest possible area. The cramping influence of frictions may be reduced to a minimum when the benefits of enhanced productivity are diffused from many centers. The purchasing power that is shifted from one group to another, as a result of technical or organizational improvements, may in this manner be brought into most immediate contact with the energies released by these improvements.

From a social point of view it is desirable that gains in productivity should bring a larger output, with advanced living standards for consumers at large, rather than special advantages for some, coexisting with idleness of important productive resources. These ends may be most readily attained through a reduction in the selling prices of the finished goods immediately affected by the productivity gain, a reduction equivalent to the saving in cost of production.[9] For

[9] This statement of the conditions that arise with advances in productivity deals with general considerations only, and with the *strategy* of economic adjustment rather than with *tactics*. It does not take account of the problems of the individual manufacturer in setting the selling price of a specific commodity. On this level the issues are numerous and complicated. The various elements of cost, on a per unit basis, are hard to differentiate, difficult to measure. The probable effect of a given change in price on volume of sales is largely a matter of guess-work, until the step is taken. At a given time many of the costs of the individual enterprise are fixed, and the manufacturer is not free to adjust them in the light of changed productive conditions. Moreover, many manufacturers are several stages removed from the final market, with numerous distributional costs, not open to their control, intervening between their selling prices and the final prices paid by the consumers. These various circumstances render the fixing of a suitable selling price perhaps the hardest single problem confronting a manufacturing producer. We gain only a distorted view of the issues faced in effecting social adjustment to changes in industrial productivity if we fail to recognize the complexity of the price-setting problems of individual manufacturers, and

goods of elastic demand this would mean immediate absorption of all or part of the energies released by the gain. For goods of inelastic demand a shifting of productive resources to other employment is inevitable. In either case the wide sharing among consumers of the benefits of higher productivity would lessen the adverse influence of economic frictions and contribute to a prompt use of the released productive energies.

the meagerness of present economic knowledge concerning them. But the price-making policies of business men, the tactics of intelligent business administration, may be adapted to broader principles. The present statement is concerned with such principles, relating to the task of adaptation to industrial change under the existing economic organization.