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Productivity, Costs, and Prices: New Light from an Old Hypothesis

ABSTRACT: Changes in productivity, costs, profits, and prices since 1961 are examined in the light of the hypothesis formulated by Wesley C. Mitchell in 1913, to the effect that a prolonged period of prosperity tends to generate inefficiencies in a private enterprise economy. They arise partly from the reactions of workers to the better employment opportunities, wages, and fringe benefits with which they are faced, and partly from the reactions of business enterprises to their own prospects and opportunities. The growth of these inefficiencies reduces productivity, raises costs, and the higher costs get reflected in prices. In the initial stages of a cyclical expansion prices usually rise faster than costs, but after a time the rise in prices is not sufficient to cover the rise in costs in industry generally, and profit margins decline in many industries. This is an important factor reducing incentives to invest, and increasing the chances of recession, as firms seek to cut costs. Nevertheless, a recession, even a mild one, sets in motion forces that tend to eliminate the production inefficiencies that developed during prosperity, and to lower the rate of inflation. Some of these results begin to appear during the recession, others become evident only

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during the ensuing recovery. ¶ A detailed review suggests that the period 1961–69 fits this description of the expansion and boom phase, while 1969–72 fits the recession-recovery phase. During 1973 an acceleration in costs as well as in prices began again, with prices initially rising faster than costs. Toward the end of the year costs had begun to rise faster than prices.

In the first quarter of 1974 the output of the economy—real GNP—declined at an annual rate of close to 6 per cent and the price level advanced at a rate of more than 10 per cent. Since employment in the first quarter was about the same or a little higher than it was in the fourth quarter and the workweek declined only slightly, output per man hour—or productivity—dropped sharply. Since hourly earnings continued to advance in the first quarter, labor costs per unit of output advanced sharply. As a matter of fact, in the first quarter productivity in the nonfarm sector declined at an annual rate of around 3½ per cent, a very sharp decline, while unit labor costs rose at an annual rate of around 11 per cent, or slightly faster than the price level.

As I reckon it, with the end of the first quarter we had just completed one year of a growth recession. A marked slowdown in economic growth began early in 1973, continued through the rest of the year, becoming an actual decline in activity—aided and abetted by the energy situation—around November, 1973. The slowdown in growth was accompanied, as such slowdowns have been in the past, by a reduction in the rate of productivity growth. Since there was no slowdown in the rise of wages, labor costs per unit of output began to accelerate during 1973 and the acceleration continued through the first quarter of 1974. Thus we entered upon a cost inflation as well as a price inflation.

This is particularly unfortunate because, by the end of 1972, a great deal of progress had been made in the direction of stabilizing costs of production. This fact was not widely recognized at the time. Nevertheless, during 1972 the statistics for all nonfinancial corporations combined show that unit labor costs rose only 3 per cent, that other costs fell nearly one per cent, and therefore that total costs per unit of output rose only two per cent. This low rate of increase, together with some recovery in profits per unit from the level to which they had declined, was compatible with, and was in fact accompanied by, an inflation rate of 3 per cent or less. This achievement in the direction of cost stabilization, which had favorable implications for our competitive position in foreign markets as well as for inflation at home, has now been dissipated. I believe the stabilization was,

in part, a delayed effect of the 1969–70 recession and the cost-saving, productivity-enhancing efforts that the recession generated. If we are to learn from such experiences we need to know something about the way such developments come about and what their consequences are. To this end I shall try to show how, in the course of a cyclical boom and recession, productivity, costs, and prices interact with one another, accelerating in one phase, stabilizing in another.

My hypothesis about this process goes back to the one formulated by Wesley Mitchell more than sixty years ago, in 1913. Mitchell was one of the founders of the National Bureau of Economic Research and directed its research for many years. Although he formulated this hypothesis in 1913, and the Bureau was not born until 1920, many of the investigations by the Bureau over the years have pertained to it. Briefly, the hypothesis is that during the course of a boom the general level of prices advances with increasing speed, but at the same time inefficiencies in production develop that raise costs even faster than prices, reducing profit margins and expected future profits, and eventually discouraging further expansion. As the boom subsides into recession, cost-cutting becomes a dominant theme in business enterprises. Productivity begins to pick up here and there as labor turnover diminishes and the uncertainty of employment reinforces discipline. Costs per unit of output decline, or at least rise less rapidly. Prices do likewise, but nonetheless profit margins begin to improve. Spurred by the better profit outlook, enterprises expand output and capital investment. This further aids the advance in productivity and retards the increase in unit costs of production and prices. A new expansion in economic activity gets underway, and economic growth is resumed under less inflationary conditions than prevailed when the previous expansion ended.

The period 1961–69 fits this description of the expansion-boom phase; 1969–72 fits the recession-recovery phase. Of course, governmental policies—fiscal, monetary, defense, manpower, etc.—played a major role in the character and timing of this process as it unfolded. At the same time, the private sector was itself generating forces in the directions indicated, and these forces operated at times in concert with and at times in opposition to the policies adopted. Or, to put it differently, in some ways or on some occasions, the policies were consistent with and supportive of developing tendencies in the private sector, sometimes in opposition to them. The boom of 1961–69 was not allowed to carry so far as to produce a financial crisis, an occurrence more common in Mitchell's time than today. Government policies helped bring the boom to a halt before that stage was reached. Nor was the process of recession in 1970 allowed to carry so far as to lead to deep depression, which was also more common in Mitchell's day. Government policies intervened decisively long before

that stage. Nevertheless, I think the hypothesis does explain some of the significant forces at work.

Let me begin by recalling the relevant passages from Mitchell's summary of his theory.[1] I shall quote them at length because, as I hope to demonstrate, they are extraordinarily perceptive in the context of recent experience, beginning with the end of the mild recession of 1961.

"A revival of activity," Mitchell said, ". . . starts with this legacy from depression: a level of prices low in comparison with the prices of prosperity, drastic reductions in the costs of doing business, narrow margins of profit. . . .

"For reasons that will appear in the sequel, such conditions are accompanied by an expansion in the physical volume of trade. Though slow at first, this expansion is cumulative. . . .

"Even when a revival of activity is confined at first within a narrow range of industries or within some single section of the country, it soon spreads to other parts of the business field. For the active enterprises must buy more materials, wares, and current supplies from other enterprises, the latter from still others, and so on. . . . Meanwhile all enterprises that become busier employ more labor, use more borrowed money, and make higher profits. Family incomes increase and consumers' demand expands, likewise in ever widening circles. . . . All this while, the revival of activity is instilling a feeling of optimism among businessmen, and this feeling both justifies itself and heightens the forces that engendered it by making everyone readier to buy freely.

"While the price level is often sagging slowly when a revival begins, the cumulative expansion in the physical volume of trade presently stops the fall and starts a rise. For, when enterprises have in sight as much business as they can handle with their existing facilities of standard efficiency, they stand out for higher prices on additional orders. This policy prevails. . . because additional orders can be executed only by breaking in new hands, starting old machinery, buying new equipment, or some other change that entails increased expense. The expectation of its coming accelerates the advance. Buyers are eager to obtain or to contract for large supplies while the low level of quotations continues, and the first definite signs of an upward trend of quotations bring a sudden rush of orders.

"Like the increase in the physical volume of business, the rise of prices spreads rapidly; for every advance of quotations puts pressure upon someone to recoup himself by making a compensatory advance in the prices of what he has to sell. The resulting changes in prices are far from even, not only as among different commodities but also as among different parts of the system of prices. Retail prices lag behind wholesale, the prices of staple consumers' behind the prices of staple producers' goods, and the prices of finished products behind the prices of their raw materials. Wages

rise often more promptly, but always less than wholesale prices; discount rates rise sometimes more slowly than commodities and sometimes more rapidly; interest rates on long loans always move sluggishly in the early stages of revival, while the prices of stocks—particularly of common stocks—both precede and exceed commodity prices on the rise. The causes of these differences in the promptness and the energy with which various classes of prices respond to the stimulus of business activity are found partly in differences of organization in the markets for commodities, labor, loans, and securities; partly in the technical circumstances affecting the relative demand for and supply of these several classes of goods; and partly in the adjusting of selling prices to changes in the aggregate of buying prices a business enterprise pays, rather than to changes in the prices of the particular goods bought for resale.

"In the great majority of enterprises, larger profits result from these divergent price fluctuations combined with larger sales. For, while the prices of raw materials and of wares bought for resale usually, and the prices of bank loans often, rise faster than selling prices, the prices of labor lag far behind, and the prices that make up overhead costs are mainly stereotyped for a time by old agreements concerning salaries, leases, and bonds.

"This increase in profits, combined with the prevalence of business optimism, leads to a marked expansion of investments. Of course, the heavy orders for machinery, the large contracts for new construction, and so forth, that result swell still further the physical volume of business, and render yet stronger the forces that are driving prices upward. . . .

"While the processes sketched work cumulatively for a time to enhance prosperity," Mitchell continued, "they also cause a slow accumulation of stresses within the balanced system of business—stresses that ultimately undermine the conditions upon which prosperity rests. Among them is the gradual increase in the costs of doing business. The decline in overhead costs per unit of output ceases when enterprises have once booked all the business they can handle with their standard equipment, and a slow increase in these costs begins when the expiration of old contracts forces renewals at the high rates of interest, rent, and salaries that prevail in prosperity. Meanwhile variable costs rise at a relatively rapid rate. Antiquated equipment and plants that are ill-located or otherwise work at some disadvantage are brought again into operation. The price of labor rises, not only because standard rates of wages go up, but also because pay for overtime is higher. More serious still is the decline in the efficiency of labor, because overtime brings weariness, because of the employment of 'undesirables,' and because crews cannot be driven at top speed when jobs are more numerous than men to fill them. The prices of raw materials continue to rise faster on the average than the selling price of products.

Finally, the numerous small wastes, incident to the conduct of business enterprises, creep up when managers are harried by a press of orders demanding prompt delivery.

"A second stress," Mitchell pointed out, "is the accumulating tension in the investment and money markets. [This] is unfavorable to the continuance of prosperity, not only because high rates of interest reduce the prospective margins of profit, but also because they check the expansion in trade out of which prosperity developed. Many projected ventures are relinquished or postponed, either because borrowers conclude that the interest would absorb too much of their profits or because lenders refuse to extend their commitments farther. . . .

"One important group of enterprises suffers an especially severe check from this cause in conjunction with high prices—the group that depends primarily upon the demand for industrial equipment. In the earlier stages of prosperity, this group usually enjoys a season of exceptionally intense activity. But when the market for bonds becomes stringent, and—what is often more important—when the cost of construction has become high, business enterprises and individual capitalists alike defer the execution of many plans for extending old and erecting new plants. As a result, contracts for this kind of work become less numerous as the climax of prosperity approaches. Then the steelmills, foundries, machine factories, copper smelters, quarries, lumber mills, cement plants, construction companies, general contractors, and the like find their orders for future delivery falling off.

"The imposing fabric of prosperity is built with a liberal factor of safety; but the larger grows the structure the more severe become these internal stresses. The only effective means of preventing disaster while continuing to build is to raise selling prices time after time high enough to offset the encroachments of costs upon profits, to cancel the advancing rates of interest, and to keep investors willing to contract for fresh industrial equipment.

"But," says Mitchell, in a sentence that seems hard to believe nowadays, "it is impossible to keep selling prices rising indefinitely. In default of other checks, the inadequacy of cash reserves would ultimately compel the banks to refuse a further expansion of loans upon any terms.[2] But before this stage has been reached, the rise of prices is stopped by the consequences of its own inevitable inequalities. The inequalities become more glaring the higher the general level is forced; after a time they threaten serious reduction of profits to certain business enterprises, and the troubles of these victims dissolve that confidence in the security of credits with which the whole towering structure of prosperity has been cemented.

"As prosperity approaches its height then, a sharp contrast develops among the business prospects of different enterprises. Many, probably the

majority, are making more money than at any previous stage of the business cycle. But an important minority, at least, face the prospect of declining profits. . . .

"Now such a decline in profits threatens graver consequences than the failure to realize expected dividends. For it arouses doubt concerning the security of outstanding credit. Business credit is based primarily upon capitalized value of present and prospective profits, and the credit outstanding at the zenith of prosperity is adjusted to the great expectations that prevail when trade is enormous, prices are high, and men of affairs optimistic. The rise in interest rates has already narrowed the margins of security behind credits by reducing the capitalized value of given profits. When profits themselves begin to waver the outlook becomes worse. . . .

"Thus prosperity ultimately brings on conditions that start a liquidation of the huge credits it has piled up."

Mitchell then goes on to account for the development of financial crises, differentiating between those that remain mild and those that degenerate into panics. The crisis stage is followed by depression, and we can pick up his summary at this point.

"A period follows during which depression spreads over the whole field of business and grows more severe. Consumers' demand declines in consequence of wholesale discharges of wage earners, the gradual exhaustion of savings, and reductions in other classes of family incomes. With consumers' demand falls business demand for raw materials, current supplies, and equipment used in making consumer goods. Still more severe is the shrinkage in investors' demand for construction work of all kinds, since few individuals or enterprises care to sink money in new business ventures as long as trade remains depressed and the price level is declining.

"With the contraction of trade goes a fall in prices. For, when current orders are insufficient to employ the existing equipment, competition for what business is to be had becomes keener. This decline spreads through the regular commercial channels that connect one enterprise with another, and is cumulative. . . .

"Of course, the contraction of trade and the fall in prices reduce the margin of present and prospective profits, spread discouragement among businessmen, and check enterprise. But they also set in motion certain processes of readjustment by which depression is gradually overcome.

"The variable costs of doing business are reduced by the rapid fall in the prices of raw materials and of bank loans, by the marked increase in the efficiency of labor that comes when employment is scarce and men are anxious to hold their jobs, and by closer economy on the part of managers. Overhead costs are also reduced by reorganizing enterprises that have actually become or that threaten to become insolvent, by the sale of other

enterprises at low figures, by reduction in rentals and refunding of loans, by charging off bad debts and writing down depreciated properties, and by admitting that a recapitalization of business enterprises—corresponding to the lower prices of stocks—has been effected on the basis of lower profits.

"While costs are thus still being reduced, demand for goods ceases to shrink and then begins slowly to expand. . . . Accumulated stocks left over from prosperity are gradually exhausted, and current consumpton requires current production. Clothing, furniture, machinery, and other moderately durable articles that have been used as long as possible are finally discarded and replaced. Population continues to increase at a fairly uniform rate: the new mouths must be fed and the new backs clothed. New tastes appear among consumers and new methods among producers, giving rise to demand for novel products. Most important of all, investment demand for industrial equipment revives; for though saving may slacken it does not cease, with the cessation of foreclosure sales and corporate reorganizations the opportunities to buy into old enterprises at bargain prices become fewer, capitalists become less timid as the crisis recedes into the past, the low rates of interest on long-term bonds encourage borrowing, the accumulated technical improvements of several years may be utilized, and contracts can be let on highly favorable conditions as to cost and prompt execution.

"Once these various forces have set trade to expanding again, the increase proves cumulative, though for a time the pace of growth is kept slow by the continued sagging of prices. . . . Business prospects become gradually brighter. . . . Everything is ready for a revival of activity, which will begin whenever some fortunate circumstance gives a sudden fillip to demand, or, in the absence of such an event, when the slow growth of business has filled order books and paved the way for a new rise in prices. . . ."

How well does Mitchell's theory describe and account for the developments since 1961 with respect to productivity, economic growth, and inflation? Thanks to the extensive development of economic statistics during the past half-century we are far better fortified than he was sixty years ago with statistical data bearing upon the processes involved.

The recession of 1960–61 reduced national output slightly during a period of about a year. The revival began early in 1961 and within a few months production reached new high levels. The price level was much slower to respond—as Mitchell noted was typically the case. The industrial wholesale price index sagged until early 1963 and then began a gentle rise that did not accelerate until the second half of 1964. Unit labor costs also continued stable until 1965. Long-term interest rates declined until the end of 1962, rose slightly during 1963, and began climbing rapidly in 1965. Profits, however, picked up promptly with the revival in activity in 1961.

The revival in output spread from one industry to another, and from one enterprise to another. In September 1960 nearly all of the 24 major industries covered in the industrial production index were declining; by May 1961, just eight months later, all were expanding. In the first quarter of 1961 only about half the companies in the Dun & Bradstreet sample of manufacturing, wholesaling, and retailing concerns reported sales higher than a year ago; a year later, 80 per cent reported rising sales. Improvements in profits also spread hand-in-hand with rising output and sales. This was because of the reduction in costs, since selling prices were much more sluggish. During 1961 more price indexes for manufactured goods were declining than were rising, and the proportion rising did not get much above 50 per cent until 1963. Thereafter the proportion mounted in steps until early 1966 when nearly all industry prices were going up.

Wage rates, as represented by compensation per man-hour, rose faster than prices all through the period 1961–65 at the rate of about three to four per cent per year, but showed little or no tendency to accelerate. Productivity, as measured by output per man-hour, reached a very low ebb during the 1960–61 contraction, but picked up quickly with the revival in output in 1961 and continued to advance at a rate of around four per cent per year until 1966. As a result, the high rates of increase in unit labor costs during the 1961 recession were reduced virtually to zero over the next four years. The trend in nonlabor costs per unit of output—that is, costs such as depreciation, interest payments, and business taxes—which are largely in the nature of overhead costs, was more sharply downward, reflecting both the steadiness of interest rates and the spreading of relatively fixed costs over larger output. Total costs per unit of output in the nonfinancial corporate sector of the economy exhibited a stable or slightly declining trend during the first four years of the expansion. Even though prices were not rising rapidly, they were rising faster than costs, and this kept the trend of profits per unit of output upward. Total profits benefited not only from the rise in output but also from the improvement in margins.

Meanwhile, capital utilization rates were rising and the unemployment rate was falling. Overtime hours in manufacturing rose rapidly in 1964 and 1965, and so did job vacancies as reflected in the volume of help-wanted advertising. The quit rate accelerated from 1964 to 1966—an indication that jobs were becoming easier to get, and also that labor costs were beginning to rise because of turnover. Costs of materials also began to rise in 1964. A vigorous expansion in housing construction and in plant and equipment investment contributed to the increase in output as well as to the developing pressures on the labor market and the markets for industrial materials.

The low point in total unit costs in the corporate sector was reached in the fourth quarter of 1965. This was also the low point in unit labor costs.

The low in unit nonlabor costs came one quarter later. From that point on, costs not only rose, but rose faster than prices.

All this corresponds extraordinarily well with Mitchell's description of a revival and the early stages of a business expansion: prompt increase in the physical volume of production and in profits; improved productivity and lower costs; lags in prices, wages, and long-term interest rates; the recovery becoming more widespread among enterprises and industries as it proceeds; and an emerging upswing in prices, costs, and interest rates. The timing and magnitude of this upswing was, of course, affected by the government's fiscal and monetary policy, and especially by the 1964 tax cut, the sharp increase in military expenditures in connection with Vietnam, the large new social welfare programs undertaken at the same time, and an accommodating increase in the money supply. But the effect of these policy moves depended in part upon the climate in which they were made, and the climate was developing along the lines of the Mitchell hypothesis.

Once costs per unit of output started rising faster than prices—in the corporate sector as a whole—this situation persisted for the next five years, from 1966 to 1970. Moreover, it was true not only of labor costs, but also of nonlabor costs. In the case of nonlabor costs, the rapid rise in interest rates and in the amount of business debt to carry inventories and to cover capital expenditures was clearly an important factor. Moreover, with output rising less rapidly than it had been earlier in the expansion, its effect on fixed charges per unit was less favorable. As unit costs accelerated after 1965 the price level did also, but it did not keep up with costs, and unit profits declined. By the fourth quarter of 1969, when business activity as a whole reached its peak, unit profits were 29 per cent lower than they had been in the fourth quarter of 1965. Although the corporate price level had climbed 11 per cent over the same period, total costs per unit of output had gone up 20 per cent, or nearly twice as much.

Both labor and nonlabor costs contributed to this 20 per cent rise, with unit labor costs rising 19 per cent and unit nonlabor costs, 23 per cent. Output per man-hour rose only eight per cent, while compensation per man-hour rose 29 per cent. Compared with the preceding four years of the expansion, productivity rose less than half as fast as before, while hourly wages rose nearly twice as fast.

Thus the inflation in costs resulted, as Mitchell had clearly indicated, both from a change in the efficiency of doing business and from a bidding up of the prices of labor, raw materials, and loan capital. As unemployment declined, shortages of skilled workers available for full-time employment became more acute. Between 1965 and 1969, full-time employment of nonfarm workers increased eight per cent, compared with 11 per cent from 1961 to 1965, whereas part-time employment increased 24 per cent

in 1965–69, compared with six per cent in 1961–65. A similar, related shift in the skill mix is indicated by the fact that employment of adult men rose five per cent from 1965 to 1969 while employment of adult women rose 17 per cent, and employment of teenagers rose 21 per cent. In view of the normal differences in productivity of these groups, this represented a substantial dilution of the employed work force.[3] The amount of labor employed at overtime rates continued at a high level throughout the period 1965–69. Moreover, the number of nonfarm workers with a job but not at work—because of strikes, absenteeism, holidays, etc.—accelerated sharply: the number rose 28 per cent during 1965–69 compared with 14 per cent from 1961–65. The arnount of time lost through strikes as a percentage of estimated working time, a factor bearing on efficiency as well as on the acceleration of wages, rose only slightly between 1961 and 1966, but then moved to much higher levels in 1967–69. Most of the characteristics of the later stages of a business boom that Mitchell described in 1913 can be recognized in the statistics pertaining to 1965–69.

Why did the rise in the price level not keep up with the rise in costs? The factors that Mitchell pointed to—that in some industries the increase in capacity to produce exceeds the expansion in the market for its products, that in other industries prices are held back by public regulation, custom, or long-term contracts, that the high level of interest rates checks borrowing for new construction and the resulting difficulty in placing contracts restricts the demand for materials and supplies—no doubt operated in this period too. I would add international competition to this list of factors inhibiting the rise in prices, for other countries were not experiencing the retardation in productivity growth that was occurring in the United States. In manufacturing, where the growth rate in U.S. output per man-hour was cut from four per cent in 1960–65 to two per cent in 1965–69, the growth rate in ten other industrialized countries rose from five to more than six per cent. Even though foreign wage rates also rose more rapidly than United States wage rates, the productivity difference was decisive. As a result, unit labor costs during 1965–69 rose more than four times as fast in the United States as in the ten other countries.[4]

Whatever the reasons why prices did not keep up with costs, they were not peculiar to just a few industries. Corporate profit and sales data for the 22 major manufacturing industries show that in each year from 1966 to 1969 a majority of the industries experienced declines in the ratio of profits to sales. In 8 of the 22, margins dropped continuously during this period. In only one industry, lumber, were margins higher in 1969 than in 1966. The encroachment of costs upon prices was widely felt.

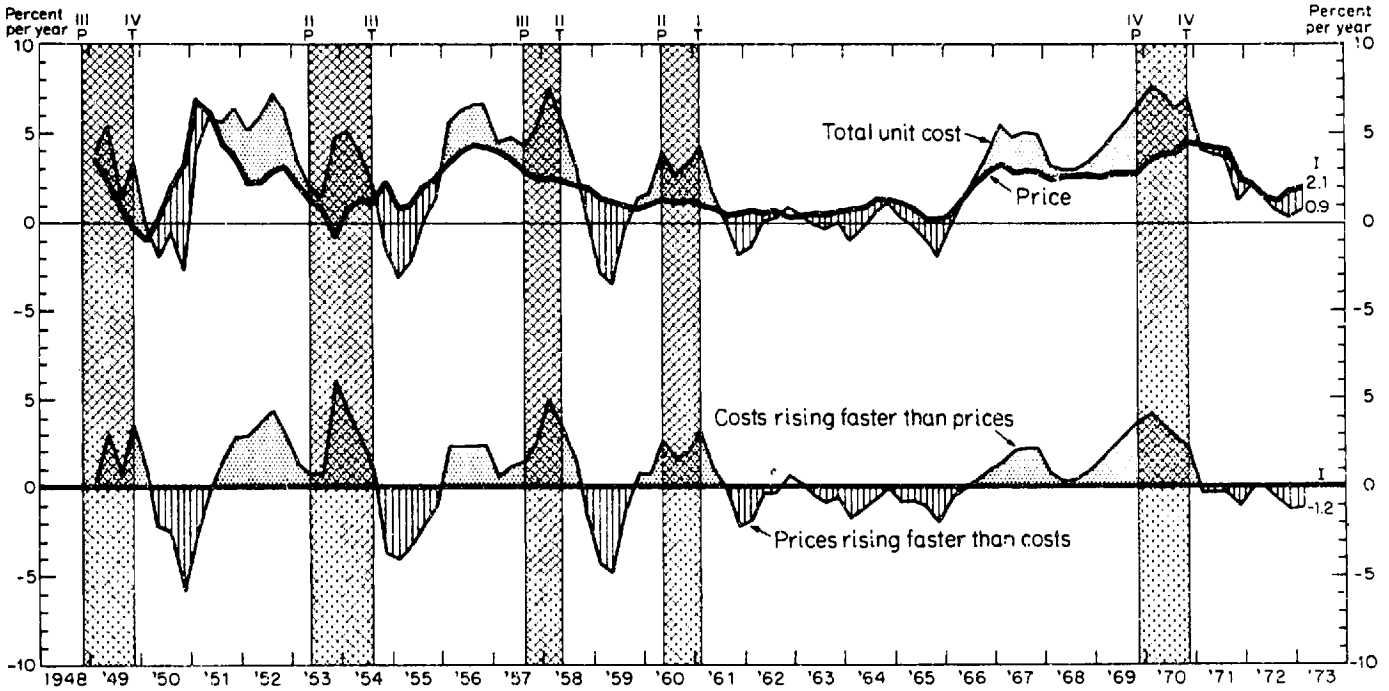
Then came the much debated recession of 1969–70; debated as to whether it was a recession, debated as to its severity, debated as to its causes, debated as to whether it was really necessary, and debated as to

whether it had any effect on inflation. It is difficult to say anything about it without taking a position on most of these issues, but I shall confine myself to one point. That is that the cost-price-profit developments during the recession and subsequent recovery resembled those that have characterized earlier recessions and recoveries, including those described in Mitchell's account. This point is certainly controversial enough, because many observers have taken the position that price-wage developments during the 1969–70 recession were unique.

The facts seem to me to support the following conclusions with respect to this period:

1. The recovery in productivity growth began during the recession and continued into the recovery. This process, whereby some of the inefficiencies built up during a period of prosperity are eliminated during recession, was described by Mitchell as one of the ways in which developments during a recession—namely the reduction in costs—pave the way for recovery.
2. The recovery in productivity reduced the rate of increase in unit labor costs. This reduction also started during the recession and accelerated during the recovery. The increase in productivity was far more potent in stabilizing unit labor costs than was the change in hourly compensation, which showed no tendency to decelerate during the recession and relatively little thereafter.[5]
3. The rate of increase in nonlabor costs per unit of output leveled off during the recession, but no reduction occurred until the recovery got underway. Then, however, the reduction was sharp. One reason for the lag was that long-term interest rates did not undergo their dramatic drop until the recession was almost over. The recovery in output played its usual role in spreading fixed costs once the recovery began.
4. Total costs per unit showed some decline in rate of increase during the recession, but the big drop occurred after the recovery got underway. Unit labor costs and nonlabor costs both made contributions to this pattern.
5. Profits per unit of output continued to decline throughout the recession, but began rising promptly when the recovery began.
6. The price level decelerated slightly during the recession, and more sharply after the recovery got underway.
7. Costs were rising faster than prices when the recession began, but the difference between their rates of increase diminished during the recession. By the time the recovery started, they were in much closer alignment. During the recovery, both decelerated together, but prices rose faster than costs, as they usually do in recoveries (see chart 1).

CHART 1 Rates of Change in Prices and Costs, Nonfinancial Corporations, 1948–73
(per cent change from same quarter year ago)



SOURCE: U.S. Bureau of Labor Statistics, "Productivity and Costs in Nonfinancial Corporations," successive issues.
NOTE: Shaded periods are business cycle contractions (NBER).

Now although there are important differences between this description of cost-price-profit changes during our most recent recession and recovery and Mitchell's 1913 description, there are basic similarities also. To conclude the comparison, since we began with a description of the position at the outset of the 1961–62 recovery, which is the point in the cycle where Mitchell's account begins, let us now compare the 1971–72 recovery with that of 1961–62.

In both cases, the rate of inflation in the price level was reduced considerably, and there was a slight reduction in the rate of inflation in the wage level. In both cases, a sharp recovery in output per man-hour occurred, which materially reduced the rate of inflation in unit labor costs. In both cases, the rate of inflation in unit nonlabor costs was cut sharply. In both cases, the rate of inflation in total cost of production was reduced to around one per cent or less. In both cases, a situation in which costs were rising much faster than prices had been eliminated, reversing the decline in unit profits. Thus, it seems to me, if the legacy of the 1960–61 recession, as described earlier in this paper, is reasonably faithful to Mitchell's analysis, the same can be said of the legacy of the 1969–70 recession.

During 1973, as I have already noted, an acceleration in costs as well as in prices began again, but prices continued to rise faster than costs until the end of the year. Then the situation turned about, with costs beginning to rise faster than prices. The accelerated rise in costs is an unfavorable development. If we are to avoid the consequences that Mitchell pointed out so many years ago, we need to pay some attention to the forces he described and draw what lessons we can from our experience with them.

What, then, are these lessons of experience? Those that I would stress, based on the preceding analysis, are as follows:

1. Changes in productivity arise from a wide variety of causes, many of which are associated with the business cycle. These changes have an important bearing upon costs of production as well as on prices; upon profits and incentives to invest; and thereby upon inflation and upon economic growth. The business cycle process, particularly in the comprehensive framework conceived by Wesley Mitchell many years ago, brings into close interrelationship productivity, economic growth, and inflation.

2. A period of prosperity, particularly when it is prolonged, tends to generate inefficiencies in a private enterprise economy. They originate partly from the reactions of workers to the better employment opportunities, wages, and fringe benefits with which they are faced, and partly from the reactions of business enterprises to their own prospects and opportunities. The growth of these inefficiencies reduces productivity,

raises costs, and the higher costs get reflected in prices. This is an important, but often neglected, part of the process of inflation.

3. Inevitably, it seems, the rise in prices after a time is not sufficient to cover the rise in costs in industry generally, and profit margins decline. This is one of the factors reducing incentives to invest, increasing the chances of recession, and restricting economic growth. Nevertheless, a recession, even a mild one, sets in motion forces that tend to eliminate the production inefficiencies that developed during prosperity. This tends to reduce costs and lower the rate of inflation. Some of these results begin to appear during the recession, others become evident only during the ensuing recovery.

4. Since no one would consider it desirable, other things equal, to abbreviate periods of prosperity and prolong periods of recession, policies should be directed specifically to the tendencies associated with these periods with a view to offsetting their detrimental effects and promoting their beneficial effects on productivity and costs. In part, this means developing ways of directing attention currently to what is happening, what the consequences are likely to be, and what may be done about it. I have long felt that the job of providing this information, diagnosis, and policy prescription was a highly useful role for the National Commission on Productivity.

5. Finally, there is a major need for studies of productivity-cost-price relationships during periods of prolonged prosperity or full-employment. What are the inefficiencies that arise in such periods? Why do costs eventually rise faster than prices? What influence does international competition have on this process? How are different industries affected? How are different plants within industries affected? In order to tackle these questions effectively, better data on productivity, costs, and prices by industry are needed. It is a striking fact that although we have global measures of the kind I have used in this paper, only 10 per cent of the private sector is covered by regularly published productivity indexes by industry. In the government sector, despite the recent progress with productivity measurement in federal agencies (accounting now for almost half of federal employment), state and local government is virtually untouched. Since the latter comprises around 80 per cent of total government employment, productivity measures have thus been applied to only 10 per cent of the government sector. Thus only 10 per cent of the private sector and only 10 per cent of the government sector are now being measured on a detailed basis. This is not enough. In particular, I think attention should be given to measurement in the corporate sector, because of the possibility of getting comparable data on productivity, cost, price, profit, and capital investment. Many of the larger companies presently construct measures of

their own productivity on a quarterly basis, and a thorough examination of these data, conducted, of course, in such a way as to avoid disclosure of confidential information, should help to illuminate the short-run productivity developments that have so large an effect upon national problems.

Some research attention should also be given to policies that would induce or promote countercyclical behavior of productivity and costs. The slowdowns in productivity growth and the acceleration in costs of production that regularly recur during business cycle expansions could perhaps be averted or at least subdued by appropriate policy actions. Most work on business cycle policies has been devoted to countering recession. It is time to recognize the need for countering some of the tendencies that develop during booms. This is less obvious and perhaps more difficult, but certainly no less important, as I have tried to show with the aid of Wesley Mitchell's insight.

Although it is a rare event in economics that a man's research should help materially to explain events some sixty years later, the fact that this does happen should be an inspiration to those who engage in, provide data for, and otherwise support new work on business cycles as well as on productivity. I hope it is an inspiration also to those who are training themselves to take part in economic research. Who knows, perhaps some sixty years hence someone will be able to point to the research now getting underway at NBER-West, not far from where Mitchell's own research began, that has helped him to understand the modest economic problems that may have survived to 2034.

NOTES AND REFERENCES

1. Chapter 14 in the 1913 volume, *Business Cycles*; Chapter 5 in the reprinted edition, Wesley C. Mitchell, *Business Cycles and Their Causes* (Berkeley: University of California Press, 1941). The quotation is from the latter, since Mitchell made some minor grammatical improvements in the 1941 edition. I have made two changes in terminology, substituting the modern term "overhead costs" for Mitchell's "supplementary costs," and "variable costs" for his "prime costs."
2. Mitchell was writing, of course, about a period prior to the inauguration of the Federal Reserve System, which began operations in 1914. His statement still applies, however, unless the Federal Reserve intervenes by increasing bank reserves or reducing reserve requirements.
3. George Perry has estimated the effect of this shift, showing that it contributed significantly to the lower rate of growth in output per man-hour after 1965. See George Perry, "Labor Force Structure, Potential Output, and Productivity," *Brookings Papers on Economic Activity 3* (Washington, D.C.: The Brookings Institution, 1971).
4. See Arthur Neef, "Unit Labor Costs in the U.S. and 10 Other Nations, 1960–71," *Monthly Labor Review* (July 1972). For revisions of these data and additional data for

1972, see "International Comparisons of Labor Costs and Productivity Trends in Manufacturing," Bureau of Labor Statistics Release No. 73–116 (April 6, 1973).

5. There is a prescient sentence in Mitchell's 1913 volume on this point: "The heightening of the physical productivity of labor that results from these changes (in efficiency during depression) does more than the fall of wages to diminish the ratio between money cost of labor and money value of products." (*Business Cycles and Their Causes*, p. 140). The data that are now available on the cyclical movements of productivity, hourly compensation, and unit labor costs for the entire period since 1947 bear out the truth of this statement. Although Mitchell refers here to the "fall of wages" as a factor reducing costs of production, he was aware that wage reductions were characteristic only of severe depressions. He pointed out, for example, that the recession of 1903–04 "was not sufficiently severe in America to cause a reduction in wages" (p. 16). This recession was similar in severity to that of 1953–54 (see Table 3.6 in *Business Cycle Indicators*, G. H. Moore, ed. (Princeton: Princeton University Press for the National Bureau of Economic Research, 1961).