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CHAPTER 16

Business Cycles and the Labor Market

Geoffrey H. Moore

BUSINESS cycle studies are yielding some new insights about how the labor market works, and these in turn are helping to reveal the intricate pattern of the cyclical process. Studies at the National Bureau of Economic Research suggest some needs for additional work, both statistical and analytical.

The Post-World War II Years

In recent years, there have been two substantial contractions in manufacturing employment: the first began in January 1948 and ended in October 1949; the second began in June 1953 and showed some signs of having come to an end in August 1954. Both are clearly evident in Chart 16.1, which presents seasonally adjusted data by months for several labor market series relating to manufacturing.[1] (The lesser decline in 1951–52 is not discussed here because of the special circumstances connected with it.)

The number of manufacturing industry groups with rising employment declined sharply early in each contraction, and the number with declining employment rose sharply. Seasonally adjusted data for the eleven durable goods groups (e.g. primary metals, transportation equipment, and electrical machinery) and the ten nondurable goods groups (e.g. food, paper, and chemicals) show that, in the spring of 1953, expansion was quite general. In March of that year, no less than seventeen of the twenty-one showed an increase over February, two were unchanged, two declined. The proportion rising was very high (86 per cent[2]). The rarity of such a figure is indicated by the fact that in the 310 months from 1919 through 1952, omitting the war period 1939–46, this proportion has been equaled or exceeded only twenty-two times, and each of these was in a period identified as a business expansion. The March 1953 figure has not been approached since. The number of industries with rising employment dropped to fifteen in April, was fifteen in May, eleven in June, six in July, three in August. The August figure (only 17 per cent

NOTE: Reprinted from the *Monthly Labor Review*, March 1955.

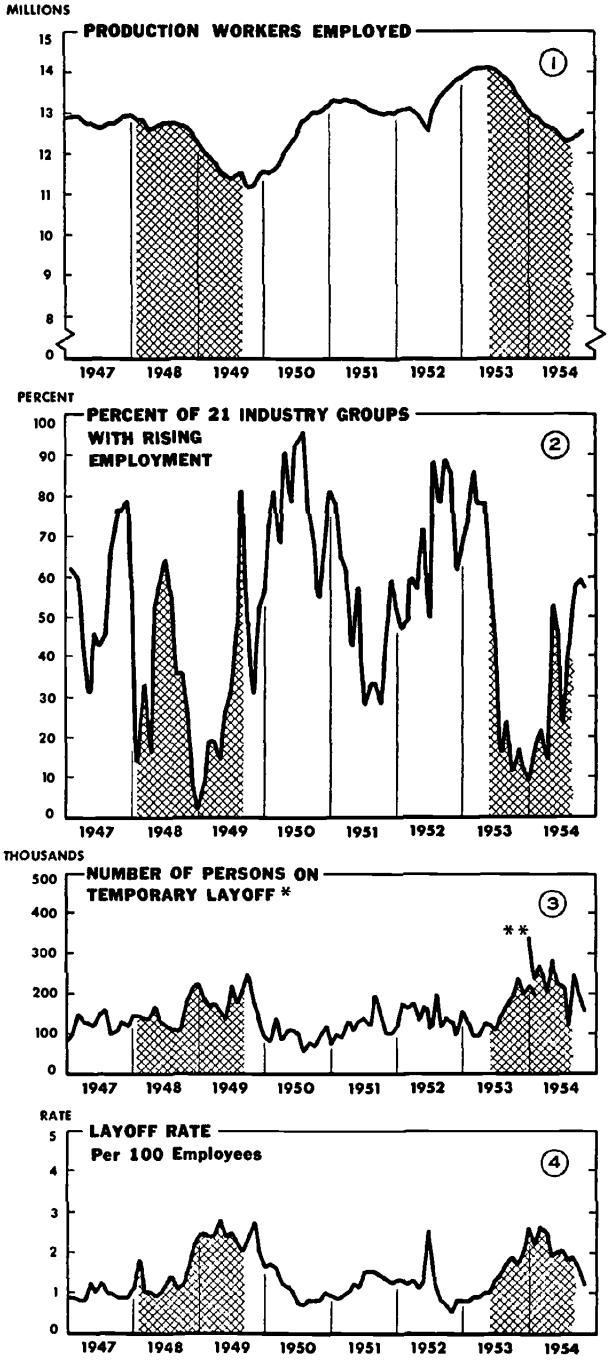
This article is based on an address given before the Manpower and Employment Statistics Training Conference of the Bureau of Labor Statistics in New York City, November 4, 1954.

[1] For sources of data, see footnote 6.

[2] In computing the percentage expanding, industries that show no change between one month and the next are split 50–50 between the rising and declining groups.

CHART 16.1

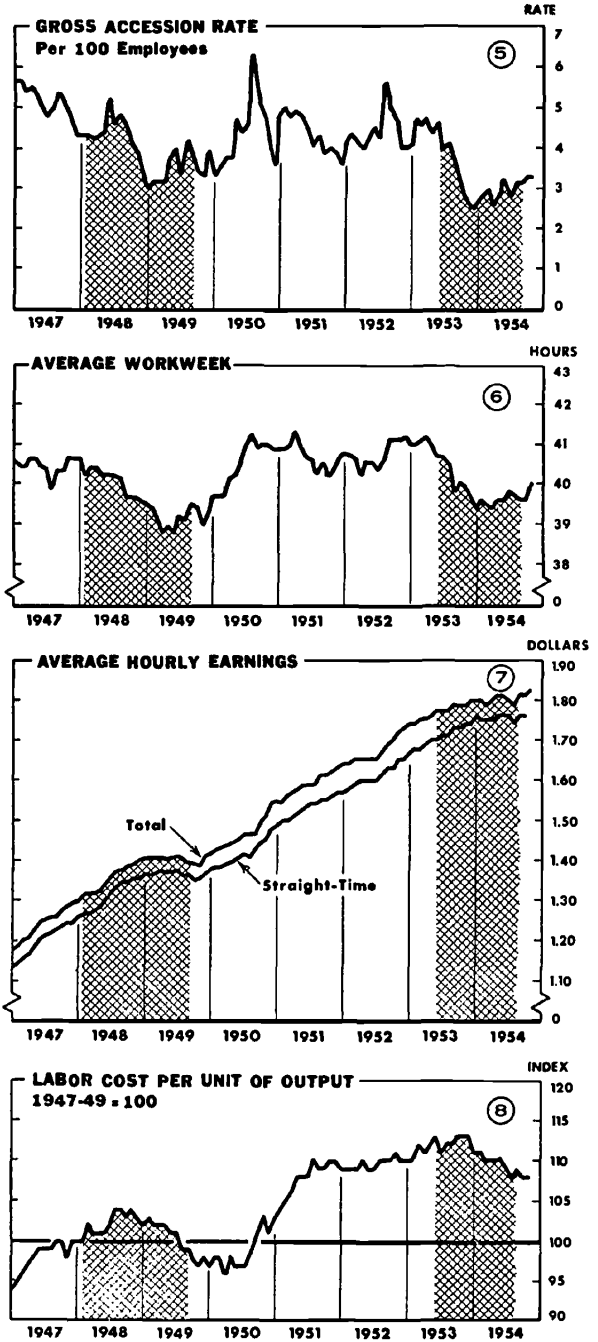
Monthly Labor Market Series, Manufacturing, 1947–54



* Persons temporarily laid off from jobs with instructions to return to work within 30 days.

** Bureau of Census labor force data based on 230-area sample to replace 68-area sample used previously.

CHART 16.1 (concluded)



SOURCE: See footnote 6.

expanding) indicated an extraordinarily widespread contraction in manufacturing employment: in only forty-three months since 1919 was the proportion so low, and with only two exceptions these were all in periods of general business contraction.

This extraordinary shift had little effect on total manufacturing employment. The seasonally adjusted figure was 14,023,000 in March 1953; it rose to 14,102,000 in June, the peak month, and then declined to 13,946,000 in August. The decline of 77,000 between March and August was hardly enough to cause concern, and it had no visible effect on the total volume of unemployment, which kept on declining (seasonally adjusted) until August. Yet within those five months the great majority of manufacturing industries had completely reversed their behavior. The general expansion in manufacturing had become a general contraction.

The number of industry groups with rising employment reached a low of two in January 1954. Since then there has been an erratic, though nonetheless real, improvement. In May and June about half the groups were expanding. In July and August the percentage expanding dropped, but not to as low a level as in the spring. In September the figure rose to 57 per cent, and in October it again increased to 60 per cent.[3] These figures are not high enough to warrant great optimism, although in previous periods of contraction a figure of 50 per cent has seldom been reached until the contraction was at an end or nearly so. More important is the fact that the improvement has been shared by both durable and nondurable goods industries and by other economic activities. All this is evidence of a point that Wesley Mitchell stressed, that contractions (and expansions) spread among industries in a cyclical process, sometimes with surprising rapidity, and that contraction begins to spread even when expansion is dominant, while revival begins even when contraction is dominant.[4]

Layoffs are, of course, inversely related to employment and to the number of industries with rising employment. Also, layoffs tend to lead total manufacturing employment, but move in roughly synchronous fashion with the proportion of industries in which employment is rising. The clearest cases in this period occurred when the seasonally adjusted layoff rate reached a low point in November 1952 and began rising, seven months before the peak in employment; and when it began declining in March 1954, five months before the low in employment in August. The gross accession rate, or hiring rate, moves opposite to the layoff rate, with roughly the same timing. It, too, began declining early in 1953,

[3] Revised figures. The comparable figure for November is 57 per cent.

[4] See *What Happens during Business Cycles: A Progress Report*, New York, NBER, 1951, Chapters 5 and 10.

reached its lowest point in December 1953, and has recovered appreciably since then.

The average workweek also tends to move earlier than the number employed, though not earlier than the accession rate or layoff rate. Apparently what happens is that, in the vicinity of an employment peak, a downtrend in the hiring rate and an uptrend in the layoff rate begins, but before the total separation rate (layoffs, quits, and discharges) rises sufficiently to overtake the accession rate and hence cause a decline in employment, there is a cut in the workweek. It would be instructive if someone were to trace these relations industry by industry, or indeed, firm by firm.

Average hourly earnings, both gross and straight time, rose during most of both contractions. There was a slackening in the rate of rise, however, and declines amounting to a few cents per hour took place after the contractions had been under way for a year or so. The differences between total and straight-time earnings were not large, but corresponded with the decline in hours and loss of overtime pay.

Finally, a crude index of labor cost per unit of output, computed by dividing production worker payrolls by the Federal Reserve Board's index of manufacturing output, declined substantially more than did hourly earnings in both periods of contraction but lagged well behind the declines in employment. Some of the factors that might account for this behavior of labor costs are listed below:

Reduction in overtime. However, the decrease in the average workweek preceded the decline in labor cost and, in any case, was not enough to cause any appreciable decline in average hourly earnings.

Reduction in wage rates. However, there were evidently no reductions sufficient to cause straight-time hourly earnings to decline appreciably.

Changes in composition of output, from high labor cost products to low. However, separate labor cost indexes for durable and nondurable manufactures behave in much the same fashion, so that shifts in composition as between these two groups do not account for the phenomenon.

Layoff of less experienced and reduced hiring of inexperienced may raise the average skill of the employed labor force, reduction in turnover may improve plant efficiency, and wasteful practices may be eliminated.

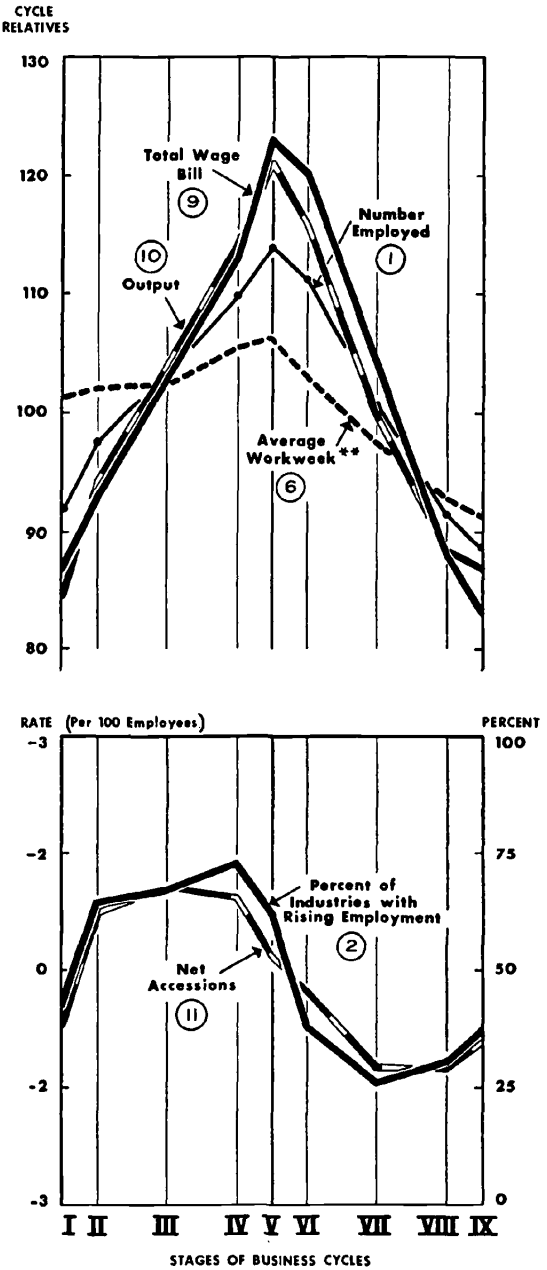
Failure of marginal concerns.

Installation of better equipment and plant, on which construction had begun during the preceding business expansion.

There is some evidence that a decline in labor costs in the later stages of business contractions leads to an improvement in hiring, a reduction in

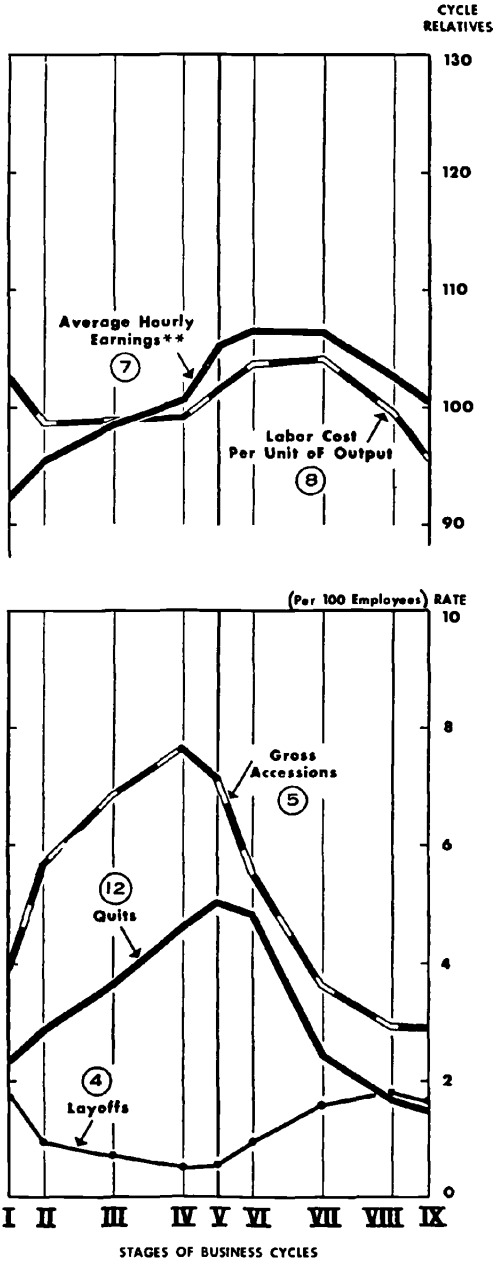
CHART 16.2

Average Levels of Labor Market Series, Manufacturing, at Nine Stages of Five Business Cycles, 1919–38[a]



[a] See footnote 5.
** 4 cycles, 1921–38.

CHART 16.2 (concluded)



** 4 cycles, 1921–38.
SOURCE: See footnote 6.

layoffs, an increase in the workweek, and finally to an increase in employment. The point is not proved, but there is a strong suggestion in the data that this is the way the market works.

Historical Comparisons

Interpretations of the data for recent years can be strengthened by a look at past patterns of cyclical behavior. Average patterns during five business cycles, 1919–38, computed by the method described by Burns and Mitchell in *Measuring Business Cycles*[5] are so smooth and regular one might take them for hypothetical figures (Chart 16.2). But they are based squarely on data of the same sort as those already presented.[6]

The patterns for employment, hours, output, and payrolls are fairly synchronous, but differ in relative amplitude. Actually there are short leads in the workweek and short lags in payrolls, but they are smoothed out in these patterns.

The percentage of industry groups with rising employment and the net accession rate are fairly synchronous with one another, but lead employment by long intervals. The net accession rate does not become negative until the first stage of cyclical contraction, or positive until the first stage of expansion. Similarly, the percentage of industries with rising employment falls below 50 early in the contraction and rises above 50 early in the expansion. In this way a connection can be traced between these variables and cyclical movements in aggregate employment.

The layoff rate and the accession rate both lead employment, but the quit rate is synchronous with employment. When the layoff, quit, and discharge rates are combined to form a total separation rate, it moves up in most business cycle expansions and down in contractions; the cyclical

[5] Each of the time series, after adjustment for seasonal variations, was broken into segments corresponding to the five cycles in general business activity. The terminal dates of the cycles were: April 1919 to September 1921; September 1921 to July 1924; July 1924 to December 1927; December 1927 to March 1933; and March 1933 to May 1938. Within each cycle, the data were broken into nine stages, marked off on the basis of the cyclical turning dates. Stage I covers the 3 months centered on the initial trough; stage V, the 3 months centered on the peak; and stage IX, the 3 months centered on the terminal trough. Stages II to IV cover successive thirds of the length of the expansion and stages VI to VIII, successive thirds of the contraction.

[6] The sources of data used in Charts 16.1 and 16.2 are: (1) production worker employment in manufacturing, BLS, with seasonal adjustment by Federal Reserve Board (FRB); (2) month-to-month changes in BLS data on production worker employment in manufacturing, with seasonal adjustment by FRB—11 industry groups, 1919–22; 21, 1923–28; 22, 1929–38; 21, 1947–54; (3) Bureau of the Census, with seasonal adjustment by NBER; (4) and (5), BLS, with seasonal adjustment by NBER; (6) and (7), National Industrial Conference Board, 1921–33; BLS, 1933–38 and 1947–54, with seasonal adjustment by NBER except no seasonal adjustment required for total earnings, 1951–54, and for straight-time earnings, 1947–54; (8) factory payrolls, BLS, divided by manufacturing production, FRB, with seasonal adjustment by NBER; (9) factory payrolls, BLS, with seasonal adjustment by NBER; (10) manufacturing production, seasonally adjusted, FRB; (11) and (12) BLS, with seasonal adjustment by NBER.

behavior of the separation rate is dominated by quits, not by layoffs or discharges.

Hourly earnings lag behind movements in employment, especially at downturns, and show a rising trend. Wage cost per unit of output lags at peaks and at troughs, and shows a level or declining trend in the inter-war period. Apparently changes in output per man-hour have a greater influence on labor costs during the early stages of expansion and during the later stages of contraction than at other times, but changes in hourly earnings are certainly one of the chief factors affecting labor costs, to judge by the similarity in the patterns. When labor cost increases in later stages of business expansion and early stages of contraction, the hiring rate retards and then declines, while the layoff rate begins to rise. When labor cost decreases in later stages of contraction, the decline in the hiring rate slackens and the layoff rate begins to decline.

These materials suggest a hypothesis, or rather a series of hypotheses, concerning the interaction of labor market processes. More work needs to be done to test these hypotheses, which seem to be peculiarly subject to verification because of the long leads and lags, with considerable variation from one cycle to another. The data for individual industries need to be examined. For example, is the behavior of the crude index of labor cost per unit of output borne out by similar computations for individual industries? Similarly, there is need for analysis of the individual cycles. The 1933–37 cycle, for instance, was unique because of the activities of the National Recovery Administration; did this have effects that contrasted with experience in other periods of cyclical revival? There are a multitude of such questions, and the materials developed by the Bureau of Labor Statistics have provided economists with a wealth of data in which to search for the answers.[7]

[7] See the extensive analysis by Thor Hultgren, *Changes in Labor Cost During Cycles in Production and Business*, Occasional Paper 74, New York, NBER, 1960.