CYCLICAL FLUCTUATIONS IN PROFITS

1. EARNINGS RATES FROM 1919 THROUGH 1928

THIS chapter will examine, in somewhat broad terms and from a somewhat different point of view, data which are presented in more specific detail in other parts of the volume. Our interest here is not in the particular industry that may be named in the discussion, but in its behavior along with, or relative to, certain other groups during the up- and down-swings of the business cycle. The analysis will be restricted to Manufacturing and its various branches; nothing will be said of Trade, Mining or Finance. These three divisions, to be sure, exhibit cyclical variations which it is important to examine; but the smallness of the Mining sample (see Ch. 25), and the fact that in Finance somewhat different accounting procedures are the rule than in Manufacturing, make it inadvisable to compare these four divisions in the present chapter. Data for Trade, Mining and Finance, with a limited discussion of their cyclical character, will be found in Chapters 21, 25 and 26.

Considered as a whole, the period 1919–28 indeed afforded opportunities for profit to many manufacturing enterprises. Our list of 2,046 large corporations, in all manufacturing fields together, shows an aggregate net return of 10.8 per cent upon capitalization for the ten years in question. Even the severe depression year 1921 did not

greatly lower this average. If that poor year, 1921, is eliminated by taking figures for only the years 1922–28, the return is almost the same, 10.9 per cent.[1] While there exist no data for other periods with which to compare these figures, it would seem that, judged absolutely, the series of profit ratios presented in Chart 8 confirms our general knowledge that 1919–28 was a prosperous decade (the underlying table for Chart 8 is Table 42). The Trading

CHART 8
PERCENTAGE OF NET INCOME TO CAPITALIZATION
2,046 CORPORATIONS

ALL MANUFACTURING GROUPS, 1919-28
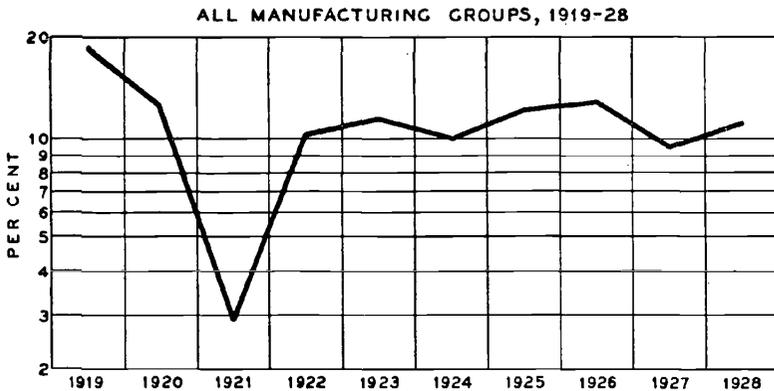
[1] The concept of investment here employed, it will be noted, is that of capitalization as earlier defined. This assumes, for valid comparison in a time series, that no substantial alterations in capital structure have taken place (see Ch. 5). Even apart from this, it would be better from some points of view to include funded debt as well as stockholders' equity in order to show the total return on the full investment of capital in an economic sense. Funded debt figures for this series are not, however, available over more than the last half of the 1919–28 period and are therefore not used in most portions of the present analysis. While in analyses that seek to determine the rate of return as between establishments or enterprises of different *sizes* (such as appear in Ch. 5), the capital figures employed should preferably be those which include funded debt (and the income figures, those before instead of after fixed charges on such debt), for purposes both of *time* comparison and of the comparison of different branches *of industry* over a

field was even more profitable than Manufacturing, show-
ing an average (aggregate) net return of 13.6 per cent
upon capitalization for the ten years 1919–28 and one of
13.7 per cent for the seven years 1922–28.

But the year-to-year variation in earnings is substantial.
The year 1919 afforded manufacturing industry an 18.3 per
cent return; 1920 saw this reduced to 12.3 per cent, and
the harsh year 1921 cut the figure down to 2.9 per cent.
Recovery came in 1922. From that time through 1928
fluctuations in the rate of net income were less severe,
between 9.5 and 12.4 per cent being earned in every year.

Examining Chart 8 further, it is surprising to note that
the peak of profits, in terms of the rate upon capital,
occurred in 1926 and not in 1928. Clearly, 1928 was a
better year in the stock market, relatively speaking, than
in industry. Not only was 1926 more prosperous for these
2,046 corporations than was 1928; it probably was about
as good a year as 1929. While the data now under discus-
sion do not run beyond 1928, other figures charted later in
this chapter justify this inference.

It will be noted that Chart 8 is drawn to a semi-loga-
rithmic scale, to make possible observation of the relative
year-to-year change in the rate of profits upon investment.
In Chart 9, the same data are shown upon a natural scale,
but in the form of an index with 1927 as the base year.

That 1926 was as prosperous as 1928, or even more
prosperous, can be seen again in the actual percentages of
total profit to total capital enjoyed by the 2,046 individual

ten-year period, one set of figures probably serves almost as well as the
other, if alterations in capital structure are not generally great. That the
difference between the two sets of figures in the aggregate is not large may
be seen by comparing the two ratios for all manufacturing for 1928: net
profits after interest payments on funded debt to invested capital excluding
funded debt, 11.0 per cent; the same before interest charges upon funded
debt to capital including funded debt, 10.4 per cent.

corporations comprising the series. Frequency distributions affording knowledge of the range of individual earnings are presented graphically in Chart 10. In 1926, 2.5 per cent

CHART 9
PERCENTAGES OF NET INCOME TO CAPITALIZATION
AS RELATIVES ON 1927 BASE, 2,046 CORPORATIONS
ALL MANUFACTURING GROUPS, 1919-28
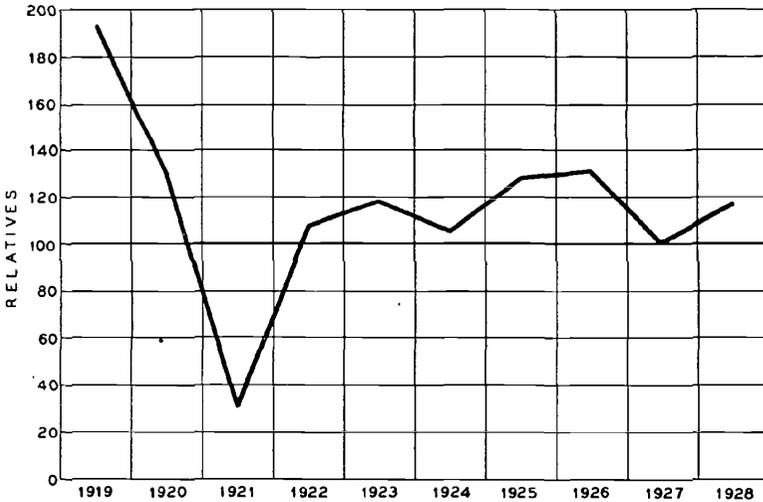
of the 2,046 companies suffered losses; in 1928, 3.7 per cent. In 1926, 33 per cent earned profits at less than 10 per cent; in 1928, 38 per cent. Then, jumping to the higher brackets, in 1926 over one-quarter of the total earned 20 per cent or over upon their capitals, whereas in 1928 only one-fifth did so.[2]

The absolute figures for net income, for capital investment and for dollar volume of sales are given in Chart 11.

[2] The distributions are given in detail in Ch. 9. The figures in these distributions are for total profits upon total capital, i.e., they include funded debt and the interest thereon. But distributions of the rates of net income to capitalization would yield about the same results; see Appendix Table 8.

CHART 10
FREQUENCY DISTRIBUTION OF INDIVIDUAL PERCENTAGES
OF TOTAL PROFIT TO TOTAL CAPITAL,
2,046 MANUFACTURING CORPORATIONS, 1926 AND 1928

——1926   - - -1928

PERCENTAGE PROFIT TO CAPITAL
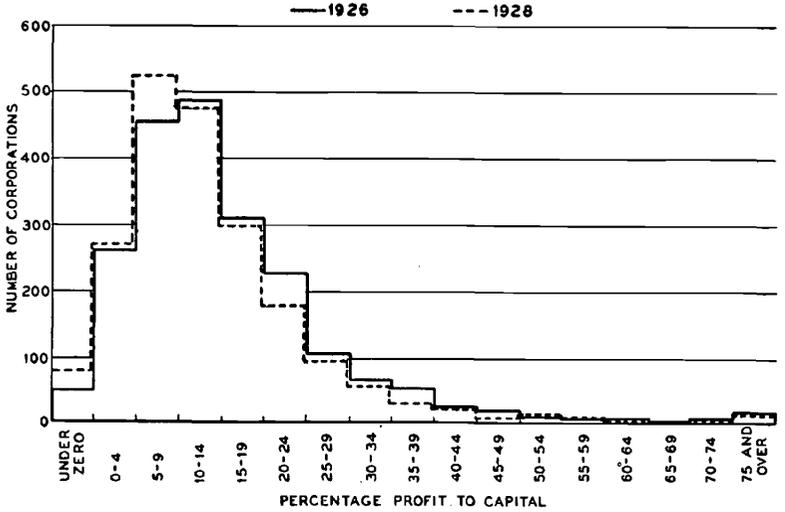
CHART 11
VOLUME OF SALES, CAPITALIZATION AND NET INCOME
2,046 CORPORATIONS
ALL MANUFACTURING GROUPS, 1919-28

——— SALES
•———•CAPITALIZATION   •••••••INCOME
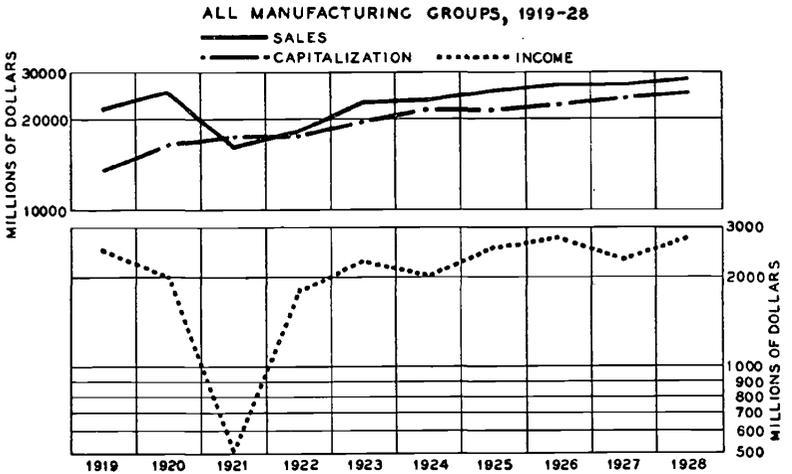
It will be noted that the rate of growth in sales volume (the scale is semi-logarithmic)[3] exceeds that in capital investment from 1922 through 1926; thereafter, the reverse is true. Comparing 1928 and 1923, however, the growth in the two series is almost exactly the same. Of the relation between sales and investment something will be said below, when the analysis of trends in particular industries is essayed.

2. RELATION OF PROFITS TO TOTAL VALUE OF PRODUCT

One point in connection with these aggregate sales figures commands especial attention. It is often contended that the cause of an industrial collapse is the increase of profits at such a rate that the mounting incomes of entrepreneurs and capitalists, during the period of expansion, leave a progressively smaller proportion of the total industrial product in the hands of wage earners and other income receivers. This is admittedly difficult to measure, but some clue can be obtained from data such as these by taking the absolute amounts of net incomes of these manufacturing corporations, adding to them the interest paid on bonded debt, and comparing the growth of those combined figures with the gross value of the product as represented by total sales volume.

This is done in Chart 12.[4] It will be observed that while

[3] Semi-logarithmic, or 'ratio', scales will be used in most of the charts of this chapter, since interest in these data centers more on their relative changes than in absolute amounts.

[4] This analysis is based only on the period 1924–28 because funded debt figures are not available for earlier years. Interest charges were estimated by assuming an average rate of 5 per cent on the issues of large industrial corporations (see Appendix A). The income figures are before Federal taxes, but the relative differences, were taxes subtracted, would be slight for this period, and the trend of the series not be altered.

It is also true that sales do not represent the entire receipts of these

total profits, including interest payments to bondholders, increased somewhat more rapidly than did total volume of product, as measured by sales, the disparity is not great. The discrepancy between the increase in the amount of income actually disbursed to security-holders and total sales indeed looms somewhat larger. It indicates a more liberal dividend policy towards the peak of the cycle; relatively less of earnings is 'ploughed back' into industry, at least less is directly so reinvested.

CHART 12
TOTAL PROFIT, TOTAL SALES AND TOTAL DISBURSEMENTS
TO SECURITY-HOLDERS

ALL MANUFACTURING GROUPS, 1924-28
━━━━━━ SALES
• • • • • • PROFIT
━ ━ ━ DISBURSEMENTS TO SECURITY-HOLDERS
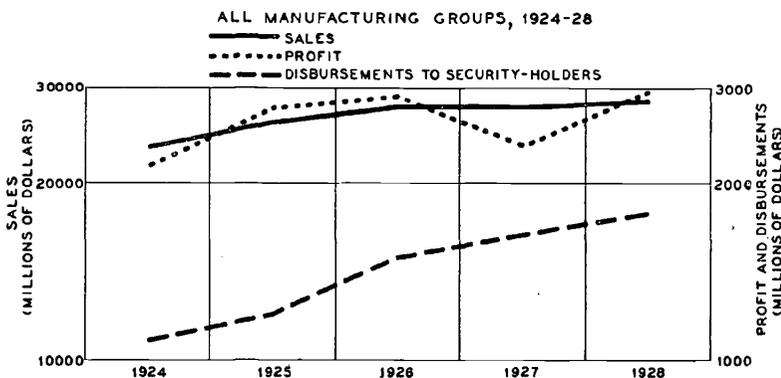
corporations; non-operating income of various kinds frequently appears as well. But the aggregate of gross non-operating revenue in manufacturing as a whole is small in comparison with that received from sales, however large the former may be in certain individual cases; and unless the ratio of the one to the other changed very markedly over the period under examination, sales serve quite well as would a more refined total gross revenue figure for purposes of *time* comparison. Of course, for certain other purposes this might not be so. The question of 'value of products' *versus* 'value added' is likewise pertinent; but for the immediate purpose at hand its discussion does not seem essential. In the flow of money income through manufacturing industry at least, the volume of sales ·best represents industry's aggregate product in terms of purchasing power received and passed on again to the one or the other productive factor. What is not disbursed to security-owners or retained in the surplus account is (apart from taxes) spent for wages, materials, supplies or rentals.

But the total net earnings of all capital—the aggregate of income ploughed back and income disbursed to both stock- and bondholders—*bore no very different relation to the total product of manufacturing industry in 1928 than in 1925 or 1926.* The bars of Chart 13 show these ratios,

CHART 13

TOTAL PROFIT AS A PERCENTAGE OF SALES,
ALL MANUFACTURING GROUPS, 1924-1928
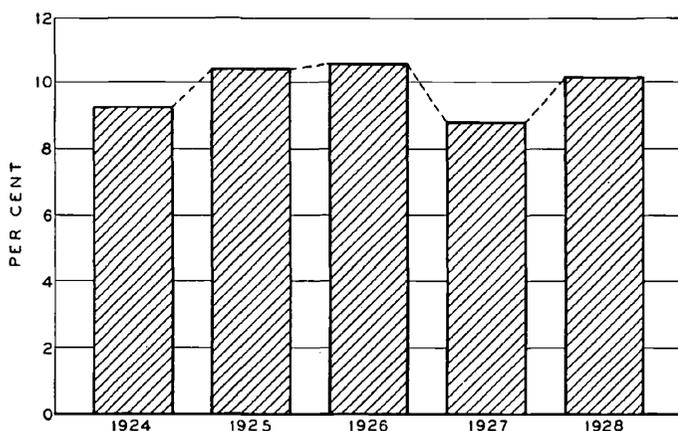
those for the three years just mentioned standing at about 10 per cent. We shall discuss this matter further in the concluding section of this chapter.

3. CYCLICAL FLUCTUATIONS THROUGH 1931

Although it is not possible to· obtain 1929 and 1930 figures for all of the 2,046 manufacturing companies just analyzed, a somewhat restricted but still closely representative sample of that group can be constructed and carried straight through from 1919 to the end of 1931. This has

been done by selecting from the list of 2,046 companies, through an empirical process of trial and error, 71 corporations in various industries for which the consolidated income and balance sheet accounts in 1927 and 1928 showed ratios quite the same as those characterizing the larger group from which they were drawn. Then, for these 71 corpora‧ tions, data drawn from other than Government sources were obtained[5] for 1927 through 1931.

In 1927 and 1928 the new figures 'fit' the data for these years drawn from the original 1919–28 series very closely, thus justifying the belief that the two series, although taken from different original sources, are for these two overlapping years indeed not only comparable but virtually identical. So far as concerns these 71 companies themselves, we may beyond question regard the last two years of the later series as a continuation of the earlier one.[6]

The only questions remaining before using the 1929–31 portion of this 71 companies series, in lieu of data for the original list of 2,046 concerns from which the 71 companies were selected, are these: how well does the earnings rate curve for the 71 companies series fit that for the 2,046

[5] See notes in Tables 50 and 52, pp. 60–1, of the Department of Commerce document previously cited.

[6] For 1927, the ratio of net income to capitalization shown for these 71 companies, when data are taken from the original 1919–28 series, is 9.6 per cent; when taken from the new 1927–31 series, 10.3 per cent. For 1928 the two figures are 10.4 and 11.4 per cent respectively. (These figures are all for net income after Federal taxes). This correspondence in ratios is quite as close when individual major industrial groups are taken in the two series as for all manufacturing groups together. It is not, as will be pointed out below, possible to divide these 71 companies into quite as many major groups as the original 2,046 concerns, since in certain groups too small numbers would result; but when classified into eight (instead of 11) such groups, the 'old' and 'new' series respectively show, for 1927, net income percentages upon invested capital as follows: Foods, 8.4, 9.3; Textiles, 7.6, 9.1; Chemicals, 7.5, 8.0; Metals, 11.2, 11.5; Paper and Printing combined, 23.6, 23.7; Stone and Lumber combined, 8.4, 9.2; Leather and Rubber combined, 6.1, 8.6; Special Manufacturing Industries, 18.5, 18.2.

concerns over the entire period *prior* to 1927; and how representative industrially is the smaller list? Chart 14 shows that the two curves follow each other, on the whole,

CHART 14

PERCENTAGE OF NET INCOME TO CAPITALIZAT,ION AFTER TAX, 1919-28

2,046 MANUFACTURING CORPORATIONS AND A SAMPLE
OF 71 COMPANIES
————— 2,046 CORPORATIONS
— — — 71 COMPANIES
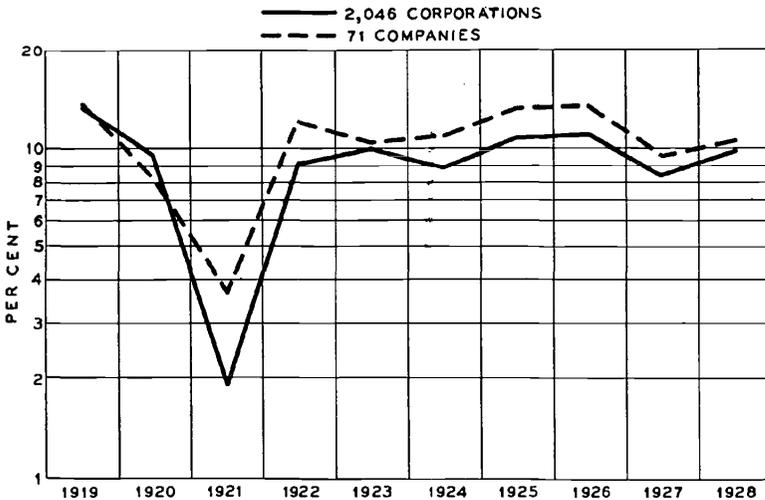
quite closely; in only one year is there an absolute difference of much over 2 per cent between the earnings ratios of the two series.[7] The other test, that of representativeness by

[7] The expression 'per cent' is here used in an absolute sense, i.e., '2 per cent' meaning the two points spread between, say, 11.2 per cent and 13.2 per cent. For a discussion of the significance of such differences, and for their interpretation upon a sliding scale of permissible amounts of difference, see Ch. 43. Here it may merely be said that the amount of discrepancy present, in view of the inaccuracies to which the data are subject, is not serious (*cf.* note 6, Ch. 7). The only exception to this statement occurs in 1922, and could readily have been caused by some dominantly large concern in one group or the other having enjoyed an inordinately

the relative amounts of capital investment in the different major groups, is fairly met also. The proportions of total capitalization shown in each of the various groups correspond fairly well in the sample and the larger list; however, because of the small number of companies in some groups, three combinations of groups had to be effected.[8]

We have then, in Chart 15, a tested series representing manufacturing industry from 1919 through 1931.[9] For the

CHART 15

PERCENTAGE NET INCOME TO CAPITALIZATION
AFTER TAX

71 MANUFACTURING COMPANIES, 1919-31
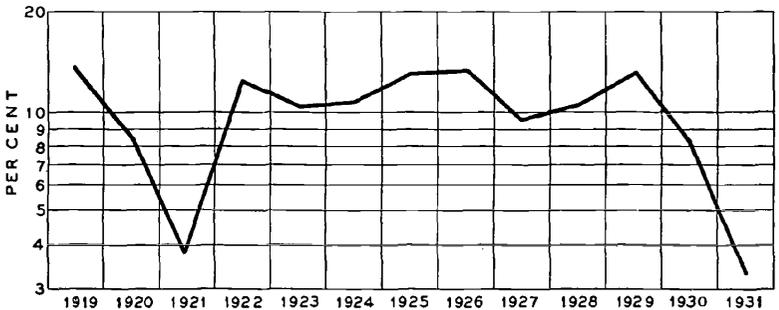
high profit in that year. Such a circumstance would have affected the ratio for the ·smaller list of 71 companies far more than for the larger list of 2,046 concerns. But even here, the discrepancy is not tremendous; the two figures are 12.1 and 9.1 per cent respectively.

[8] These percentages for the amount of capitalization in each major group (in 1927) for the list of 71 companies and for the list of 2,046 companies respectively are as follows: Food, 14.6, 11.1; Textiles, 4.2, 5.2; Chemicals, 24.3, 26.1; Metals, 41.1, 42.8; Paper and Printing, 1.9, 4.9; Stone and Lumber, 4.2, 4.1; Leather and Rubber, 7.8, 3.8; Special Manufacturing Industries, 1.9, 2.0. It should also be said that just as the capital percentages in Paper and Printing, and Leather and Rubber are somewhat 'off', so is the earnings ratio in Paper and Printing. For the group in the list of 71 companies (in 1927) it is 23.6 per cent, while for the same two groups combined in the list of 2,046 companies the figure is only 13.1 per cent.

[9] The 71 companies included have an aggregate capital of $5.3 billion in 1927, which is 22.4 per cent of the aggregate capital of the 2,046 concerns.

thirteen-year period as a whole, the aggregate return was 10.0 per cent. Taking only the 1921–29 portion of the period—which gives a 9-year span from the trough of a serious depression to the crisis in which the 'new era' prosperity culminated—the figure becomes 10.9 per cent. Table 32 gives the series divided into eight major manufacturing groups.

The most surprising thing about these figures, on the whole, is that no great or sustained upward trend characterizes them between 1922 and 1929. The period was one of relative prosperity, to be sure, but in industry (as distinguished from the stock market) no generally higher level of profits was attained during the last few years of the expansion than during its earlier phases. And the recession of 1927, commonly viewed as merely a ripple on the sea of general business prosperity, is seen to have had a more severe effect upon profits than has been realized. *Manufacturing industry on the whole earned almost as high a return in 1930 as in 1927.* The 1931 figure, of course, registers a tremendous drop. It stands at 3.6 per cent, or at almost exactly the 1921 level. But it is worthy of note that 1927, regarded generally as a year of very slight recession, was actually one of scarcely greater profitableness than 1930, regarded properly as a year of poor business activity and great unemployment. (The 1932 figure indeed *is* lower than 1921—a preliminary computation shows it to be nearly zero, 0.8 per cent).[10]

That the 1931 figure is virtually the exact rate recorded for 1921 is a rather interesting coincidence. One would have expected it to be lower. (It is fractionally lower, that is, 3.6 instead of 3.8 per cent, but this difference is negligible

[10] This figure rests upon a slightly (but not significantly) different basis of computation than the 1919–31 figures. See *Bulletin 44*, National Bureau of Economic Research, January 27, 1933.

TABLE 32

EARNINGS RATES, 71 COMPANIES BY MAJOR GROUPS, 1919–31

YEAR	FOODS	TEXTILES	LEATHER AND RUBBER	LUMBER AND STONE	PAPER AND PRINTING	CHEMICALS	METALS	SPECIAL MANU-FACTURING INDUSTRIES
1919	–.2	18.0	13.4	12.7	10.5	14.0	22.3	17.2
1920	4.5	5.0	2.7	14.3	14.7	8.3	12.3	9.2
1921	4.9	7.4	–7.4	6.7	6.4	2.4	7.0	5.3
1922	8.3	11.7	5.7	12.5	17.0	9.3	18.4	18.4
1923	8.3	12.2	4.6	17.3	15.4	5.4	14.4	19.3
1924	7.9	5.7	6.7	12.4	19.9	8.5	13.7	17.0
1925	8.3	7.4	12.2	11.3	20.9	11.7	16.2	16.4
1926·	9.8	7.0	10.2	10.9	21.0	12.2	16.2	17.8
1927	8.4	7.6	6.1	8.4	23.6	7.5	11.2	18.5
1928	9.2	5.7	2.3	9.1	29.0	12.2	11.1	16.5
1929	10.5	7.2	4.5	11.5	26.7	11.6	16.8	11.9
1930	11.6	–.7	–3.7	3.7	22.3	7.5	10.4	8.2
1931	9.5	–2.3	–3.4	–.5	13.7	3.1	3.2	4.3
1919–31	8.0	6.7	4.1	9.6	18.8	8.5	12.7	14.2

in view of the character of the data; see note 8.) Economic conditions in general were worse in 1931; certainly unemployment was greater, and the several indexes of general business activity all dipped much lower.[11] Yet the average rate of net income to capitalization earned by large manufacturing corporations was virtually the same as in 1921.

This is not, to be sure, true of every manufacturing group. Some major groups are seen to have made relatively better showings in 1931 than in 1921 while others appear in a relatively worse light. Table 33 gives the earnings

TABLE 33

71 COMPANIES SERIES, PERCENTAGE INCOME TO CAPITALIZA-
TION AFTER TAX, BY MAJOR GROUPS

(as relatives on 1927 base)

GROUP	RELATIVES			
	1921	1927	1928	1931
Foods	58	100	110	113
Textiles	97	100	75	−30
Chemicals	32	100	163	41
Metals	63	100	99	29
Paper and printing	27	100	123	58
Stone and lumber	80	100	108	−1[1]
Leather and rubber	121	100	29	−56
Special manufacturing industries	29	100	89	23
All groups	40	100	108	38

[1] Estimated; see Appendix A.

rates of the groups in several years, expressed as relatives with the year 1927 taken as 100.

Returning to the composite figures, in which the rate of return for all manufacturing groups stands at 3.6 per cent in 1931 as compared with 3.8 per cent in 1921, we may

[11] For example, the *Annalist* index stood at 65.0 in November, the 1931 low, as against 81.6 per cent in March, the 1921 low. The index of the American Telephone and Telegraph Company in December 1931, stood at −47.4, whereas in July 1921, it was only −27.4.

note the relationships prevailing between the general net income curve and the indexes of general business activity. Chart 16 presents three series of relative or index figures. The curve showing by far the largest fluctuations is that for

CHART 16

RELATIVES FOR EARNINGS RATES FOR 71 MANUFACTURING COMPANIES AND FOR ANNALIST AND A. T. AND T. INDEXES OF BUSINESS ACTIVITY, 1919-31

[1] 1927 = 100
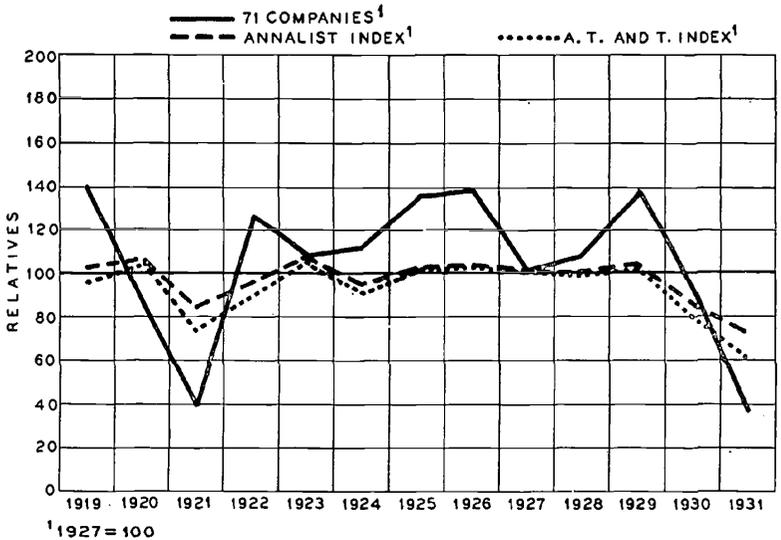
the rate of net income. The two business activity series are the *Annalist* and American Telephone and Telegraph Company indexes, converted into relatives with the same base as that of all the net income series, the year 1927 being taken as 100 in all three series.

The index of corporate net income, or rather of the rate of return for large corporations in Manufacturing industries, is seen to fluctuate from about 140 to 40, while the two indexes of general business activity move only from

about 107 or 104 to about 70 or 60 respectively. In other
words, the amplitude of the extreme swing is roughly twice
as great in the rate of net corporate incomes as in general
business activity.

In closing this chapter, we revert to a point made earlier.
This last series of figures, like a preceding one that was ex-
amined, fails to show any continuous increase in the earn-
ings rates of large corporations[12] during the five years
leading up to the 1929–30 collapse. The data thus do not
lend support to explanations of recession that hold that
cumulatively increasing profit rates in industry at large are
the fundamental cause of general overexpansion, eventual
crisis and subsequent liquidation. If anything, closer exam-
ination of the figures suggests that the collapse of 1929 was
not caused principally by generally high earnings rates pre-
vailing in the period immediately preceding.[13]

It has been remarked that the curve for all manufactur-
ing fell about as low in 1927 as in 1930. It is also true that
it stood as high in 1926 as in 1929. This is likewise true of
the showing of most of the major groups themselves. The
rate of return in Metals was virtually as high in 1926 as
in 1929. The same is true in every other group with the
sole exception of Paper and Printing; and here the ade-
quacy of the sample is somewhat questionable (see note 9).
Most of the series, it may be repeated, show no sharp up-
swing whatever in the rate of profits upon investment dur-
ing the three or four years ending in 1929; no more so
than during the three or four years prior to 1926.

Observe carefully the data for Metals and Chemicals
for 1926 and 1927; and again for 1929 and 1930. Ex-

[12] That is, in terms of their ratio to investment, which is the proper way
to measure the profitableness of industry. In absolute amounts, of course,
profits increased greatly.

[13] *Cf.* Gordon Hayes, Profits Destroy Prosperity, *New Republic,* June 3,
1931, pp. 67–9.

amine the Food figures; then turn back to the curve for All Manufacturing (Chart 15). The declines in the important Metals and Chemicals groups are about as severe between 1926 and 1927 as from 1929 to 1930. In Foods, also an important group, a decline occurred in 1927, but none in 1930. In All Manufacturing together the 1926–27 decline is from 13.3 to 9.6 per cent while that in 1929–30 is from 13.2 to but 8.3 per cent—a difference not at all striking.

Why, then, did not 1927 turn into a year of pronounced recession such as 1930; or 1928 become a year of deep depression such as 1921 or 1931? Certainly the answer is not that the profits situation was essentially different in 1928–29 from that in 1925–26. As a matter of fact, aggregate earnings upon investment for the three years 1924–26, for All Manufacturing, actually stand at a higher level than do those of the three years 1927–29. If 'profits destroyed prosperity' in 1929, as has been said, they should have done so equally in 1926.

But to say that *generally* high earnings in industry (or even in large major groups of industries) exerted no causative influence upon the cessation of prosperity does not mean that the large net incomes enjoyed by *particular branches* of manufacturing may not have resulted in an overexpansion of investment in those specific industries during the years 1927–29, and thus contributed to bring about a general collapse. To examine the evidence for or against this somewhat different point, we may next, returning to the data for the 2,046 companies from 1919–28, analyze the rates of earnings and the growth of capital in 73 sub-branches of the several major groups just discussed.