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VIII FURTHER ANALYSIS OF ACCOUNTING RECORDS[8]

THE RESULTS derived from the present sample are sufficiently interesting to suggest the value of further analysis of accounting records. A sample more adequate than the one on which these results are based would make possible a more extensive study of financial and operating data than was felt justified here. For example, the differences in the several balance sheet and income account figures and ratios, when related to the rate of earnings (itself a financial ratio), might enable us to measure the influence of some of the factors affecting profits and their variability. Further, if a broader sample were available the rate of earnings in industries other than manufacturing and trading could be adequately covered. Variation in the rates of return, and changes in this variation, might be described in detail, use being made of a more refined statistical technique.[9]

Proper observation of fluctuations in earning rates from year to year obviously requires data for a period longer than three years. This is true also of the relationship between the

[8] Prepared by Mr. Fabricant.

[9] An interesting application of measures of extent of dispersion, of skewness (which indicate the lack of symmetry of the variation about the mean), and of kurtosis (which suggests the degree of concentration around the average) has been made by R. T. Bowman in *A Statistical Study of Profits* (Pennsylvania University Press, 1934). That light can be thrown upon the nature of the various factors affecting the operating and financial characteristics of business concerns by the employment of these tools is indicated in this work.

variability and level of earnings, which can be established only on the basis of data covering a longer period.

Geographical differences in earning rates, one of the points intended to be covered in the present study, could be looked into if a larger sample were available. The relation of age of concerns to rate of earnings is another question that invites study.

Variation in earning rates by size of company demands more detailed analysis. The influence, upon measures of profit-making, of outside investments in the case of large concerns, and of compensation paid to officers in the case of small corporations, should be traced. The possibility that methods of valuing assets vary with the size of the enterprise also deserves attention.

Differences in the character of the capital structure, and the consequences of these differences, require more adequate description than is possible on the basis of the present sample. Such sources of funds as banks, the open market, private loans, and finance companies should be distinguished. The discussion of the varying soundness of preferred stock issues merits amplification to include the soundness of bond or mortgage issues, especially during the recent depression period.

A detailed study of operating and financial ratios, as they vary from industry to industry and among corporations of different size, is much needed. On the basis of a comprehensive sample of audit reports, a set of managerial ratios might be furnished to the business man and the accountant that might prove especially useful because their relation to the level and variability of profits would be indicated. Interest lies not only in the characteristics of the *average* firm, in the typical ratios, but also in the characteristics of the *successful* firm.

Sources of income other than ordinary operations cannot be investigated effectively without a much larger body of data than is now available. The various types of costs also invite analysis.

Of special value might be a study of current accounting practices. No clear notion of the data made available by accounts, or of the rules which guide business men, can be obtained without a detailed examination of the practices as they really exist. The written rules do not necessarily describe the behavior of business men. A study of how business men *actually* value their assets, compute their costs, determine their policies, is essential. Professor John B. Canning, in *Economics of Accountancy,* has discussed this matter admirably; a quantitative study that would indicate the relative frequency of various methods of valuation would supplement that work.

In a recent inquiry, for example, the National Association of Cost Accountants discovered that of 117 companies 46 had written down the value of their assets in the years following 1929, half to 'present market value' and half to 'net sound value'. That there was 'considerable' writing-up of assets in 1928 and 1929 is generally believed. A brief investigation by the National Bureau of Economic Research, summarized in R. C. Epstein's *Industrial Profits in the United States,* pp. 545-7, gives some indication of the extent of changes in valuation policy. Of 67 fairly large corporations reporting, 17 had, during the period 1919-31, changed their method of valuing assets. No indication is given of the extent to which methods of valuation at a given date varied from company to company. These figures represent simply the number of changes, which might have worked towards more or less uniformity in method of valuation. Another bit of evidence is provided by the present sample. Reserves for appreciation were reported as follows: 1927, of 691 corporations by 78; 1928, of 711 by 88; 1929, of 709 by 96. The percentage of corporations with appreciation reserves thus increased slightly during this three-year period.

Further, a study [10] of the published reports of 182 identical corporations for the years 1927-32 reveals that write-downs constituted about one-tenth of the net fixed assets of this group of companies. Write-ups constituted 0.9 per cent of the net fixed assets, and write-downs 9.7 per cent, with a net figure of 8.8 per cent. Write-ups were scattered irregularly throughout the five-year period; most of the write-downs were made in 1931 and 1932.

Whether the effects of differences in accounting practice are cancelled, even in a large sample, is of particular interest in the interpretation of 'book values'. It is doubtful that they are cancelled during short intervals. Apart from differences in principle, a mass bias may be involved, even in the application of identical principles. Are concerns that write off too much depreciation, for example, offset by concerns in the same industry, or of the same size, that write off too little? If these two groups do not balance, the mass error resulting may be of significance in an analysis of the consequences of the behavior of business men. It is often held that, in the long run, the amount of depreciation written off cannot exceed the cost of the assets less salvage value. But there may be swings of excess and deficiency (in terms of cost figures) in depreciation charges, or over- or under-charges for depreciation may appear sporadically through reorganizations, sales of property and equipment, and write-downs. These swings are correlated no doubt with general business conditions; they are probably related also to any major changes in price levels and conditions within a specific industry or industry in general. Even a ten-year period may be insufficient for them

[10] Arthur H. Winakor, Maintenance of Working Capital of Industrial Corporations by Conversion of Fixed Assets, *University of Illinois Bulletin No. 49* (1934), p. 24.

to offset one another. In addition there may be a chronic state of overvaluation or undervaluation of assets persisting over periods longer than the life of the assets. While perhaps not affecting estimates of annual earnings materially, this may materially distort comparisons of capital and therefore of rates of return. Differences from industry to industry, from one period to another, between large and small concerns, from one region to another are thus set up which, to some extent, vitiate the conclusions drawn directly from accounting data.

A thoroughly detailed accounting report is necessary to cast light on the practices and policies of a company. But even the usual brief reports available can be made to yield information at least indicative of the differences in practice, especially if a considerable series is available for each company. Depreciation rates, reserves for depreciation, the presence or absence of entries for intangible assets, the amount of intangibles being written off, the method of valuing inventory, the existence of appreciation reserves and reserves for contingencies, the recording of contingent liabilities, the analysis of the surplus account, all these reveal accounting practices and managerial policies. Persistence in rank of rates of return from one period to another may simply be due to and indicative of individual and industrial differences in valuation of assets.

Other information bearing on many economic problems could be obtained from a sufficient sample. The problem of corporate savings is an example. It is shown above that only 57 per cent of the earnings available for distribution to common stockholders of the 700 corporations in the present sample was paid out in the form of dividends. The relation of the resulting savings to the rate of return would help to show whether the aggregate volume of national savings was changed because of this particular form of saving, and whether investments in certain industries mean a scanty supply of capital in others. The assets in which savings by business enterprises are invested would suggest the use to which they are put and the possible repercussions upon the economic system. The relation of corporate savings to other sources of capital would be of interest. In the present sample earned surplus (even if we neglect stock dividends) accounted for over 30 per cent of the total stock equity.

Changes in assets and costs reveal the characteristics statisticians have come to expect in economic series at large. Trends, cycles, seasonal movements, and other more irregular fluctuations are discernible. These changes, especially the long-time movements, portray at once the development of the economic system and the changing structure of its relationships. No attempt to trace the historical growth of our economic institutions and processes may neglect the side revealed in books of account. A study of these changing relations would indicate the development and extent of hand-to-mouth buying and producing, for example.[11] Light would be cast on the relation between size of concern and amount of stock required to carry on a given volume of business. Variations in the degree of mechanization of industry and the effects of the increasing use of labor-saving devices, the relation between concentration in industry and the rate of technical progress, and trends in overhead costs would be indicated. If data are made available, many facts of use in a consideration of these problems may become known, and hypotheses related to them may be tested.

Current operations may be considered as falling into two classes: production or fabrication, and distribution. Individual and industrial variation in the proportions of expendi-

[11] Since these practices lead to heavy investments in equipment and to heavier fixed charges, which tend to increase the instability of the economic system, the shift is of the greatest significance.

tures devoted to these two types of activity, and their changes in time, are obviously related to many discussions of the place of distributive expenses in the modern economy. While some scattered studies have been made analyzing the components of costs, no thorough analysis covering the entire field of enterprise has as yet been possible because of lack of data. Nor has the relation of these proportions to profits and production, to industry and size of concern, been adequately considered.

Even our measures of economic welfare depend in some part on the accounts of business concerns, and can be understood clearly only by a close study of these records. The inclusion of profits in estimates of the national income, and of book valuations of assets in computations of the national wealth, means that use is made of measures not directly based upon market valuations. What, then, is their basis? Only by an investigation of the manner in which accounts are constructed is it possible to answer this question. The controversy underlying the inclusion of corporate savings in estimates of the national income finds its root in the same difficulty with which accounting in a dynamic economy is confronted—that of valuation. The market may be the final arbiter, but which market? Balance sheets as of December 31 do not usually refer to market values precisely as of December 31. The difficulties involved have been recognized in recent rulings with respect to the basis of valuation of assets of insurance companies.

The differences in returns earned by capital invested in diverse parts of the economy (in one industry rather than another, in large or small companies, in various regional areas) measure the relative importance of the forces affecting the movements of enterprise, capital and labor. If only the quest for profits and other incomes were involved in these movements and if the factors of production were perfectly mobile, it is inconceivable that wide differences in rates of return could persist. An examination of the facts is not calculated so much to test the theory that there is a tendency towards equality of return in different industries as to measure the efficacy of the profit motive in directing the flow of investment in the various fields of industry, and to indicate the degree to which action based on this motive is impeded by economic, legal or other obstacles.

These, it is suggested, are some of the questions inviting the attention of both accountants and economists. But the further analysis of accounting records, of value in finding answers to these questions, waits on the availability of the data.