RATIO ANALYSIS OF FINANCIAL STATEMENTS

ALEXANDER WALL
AND
R. W. DUNING

Ratio Analysis of Financial Statements

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AN EXPLANATION OF A METHOD OF ANALYSING FINANCIAL STATEMENTS BY THE USE OF RATIOS

By

ALEXANDER WALL
Secretary-Treasurer

and

RAYMOND W. DUNING
Assistant Secretary

ROBERT MORRIS ASSOCIATES
(A National Organization of Bank Credit Executives)

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FINANCIAL STATEMENTS

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This Book Is Dedicated to
The Robert Morris Associates
in Whose Service the Writers
Have Secured the Experiences
That Make Its Writing Possible

Contents

Preface

UNTIL quite recently the analysis of financial statements has been considered as the examination of the financial factors of a credit risk. After having received a recognition as being of some value about 1900, the process of analysis spread and developed until ten or fifteen years ago it approached to being the principal factor in the credit decision. In fact, it was so overemphasized that more conservative analysts and more careful bankers began to condemn the excessive importance attached to the statement figures.

The greatest danger lay in the blind reliance on changes in the dollar set-up of statements and the utter lack of any standardization of measurements. Only one true test of credit goodness had been developed—the current ratio. This, being a proportion, had real value as an analytical tool, but very shortly began to lose a large part of its effectiveness for two principal reasons. First, it was open to manipulation by "window-dressing" processes. Second, it was used on a single basis for all industries without any allowance for industry strains. While a department store and a cotton mill operate under entirely different conditions, no change was allowed for a variation in the current ratio. A relationship of two dollars of current assets for each dollar of current liabilities was more or less generally set as a standard of goodness for both. When considered in the abstract the absurdity of such standardization is quite apparent.

For some ten years I have been continuously experimenting with the development of additional tests of the figure facts, for credit soundness, and in the elaboration of a method for discovering the usual in any one type of business at a given time. Frequent requests for addresses before business gatherings, followed for the most part by discussion, the growing use of the ratio method of analysis in credit classes at universities and the American Institute of Banking, the requests from industries for group 100 per cent and ratio studies, all indicate a desire for a more general exposition of these theories of statement analysis.

In the preparation of this manuscript particular recognition and credit must be given Mr. Duning, my business associate and co-author, in that his contribution to the text and his analysis of the remainder of the book have strengthened the presentation far beyond my personal abilities.

In addition, both of the authors acknowledge their indebtedness to Mr. J. F. Craddock, vice president, Continental National Bank and Trust Company, Chicago; Mr. Arthur F. Barnes, vice president, Mercantile Trust Company, St. Louis; Mr. J. N. Eaton, vice president, Merchants National Bank, Boston; Mr. A. R. Truax, vice president, First National Bank, Seattle; Mr. F. M. Sowle, vice president, Exchange National Bank, Tulsa; Mr. A. W. Pickford, vice president, Philadelphia-Girard National Bank, Philadelphia; Mr. Charles H. Dahmer, assistant cashier, Fifth Avenue Bank, New York; Mr. Charles C. Kimball, Merchants National Bank, Boston; Mr. Freas B. Snyder, vice president, Mitten Bank, Philadelphia; Mr. John J. Geddes, vice president, Illinois Merchants Trust Company, Chicago; and Dr. Frank Parker, Department of Finance, Wharton School of Finance and Commerce, University of Pennsylvania—all of whom had the courtesy to look over the text and from whom many excellent suggestions were received for its betterment.

The processes discussed seem to be an advance in analytical technique, but the perfect analysis is still somewhat remote. We will approach this only as a greater volume of material is available and firmer backgrounds established.

ALEXANDER WALL.

Ratio Analysis of
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RATIO ANALYSIS OF FINANCIAL STATEMENTS

CHAPTER I

Theory and Practice of Banking Credit

Hunch, under the disguise of credit sense, has done much to prevent the development of a credit science. Science is based upon an orderly arrangement and tabulation of facts, followed by a systematic and painstaking study of these facts, arriving consciously at a conclusion. Hunch consists of a subconscious organization of some of the same facts in a more or less disordered manner, arriving at a decision without any well-regulated process of analytical thinking. Whether used consciously or not, the facts surrounding any credit problem remain the same and, as we substitute an orderly and systematic analysis of these facts for the more disorderly hunch method, the practice of credit granting will more nearly approach a science.

Modern business has grown far more impersonal than it was ten or twenty years ago. This is due to the magnitude of single operations, if to nothing else. Neighborhood banking and purchase of materials for fabrication have largely given way to duplication of bank accounts, sometimes in cities quite remote from the point of fabrication and the buying of materials from the whole country. Even when a company maintains but one banking connection the effect is often largely the same, because such a bank is likely to be so split up in its own organization that its actual contact with the borrower is impersonal and through any one of a number of loaning officers and departments. Manufacturers and merchants are movable personalities today. Neither they nor the banker is born, lives, and dies in a single locality. In only a small percentage of cases have the banker and the borrower grown up together as boys. Even when this is the case, such acquaintance is effective more often in the new business connection rather than in granting credit. This disappearance of personalities has necessitated a change of attitude toward the credit decision. It is now more difficult and dangerous to extend credit because the credit grantor can no longer "know" the risk is good.

RISK ELEMENTS

The factors influencing a credit risk are numerous, but they may be grouped rather completely under three general headings. These elements are those of a purely financial nature—those that are human in their nature, covering personal ability and integrity of the management and such matters, and those elements which reflect the influences of general business conditions so commonly called the business cycle. Each of these three main groups of influence on the credit problem affects the decision from a different angle and with a different intensity. While we are to concentrate attention in this discussion primarily on one of these groups, it is important to orient it in its relation to the other two groups in order to establish its relation to them both in importance and in actual overlapping of influence or indicative value.

FINANCING

Financial statistics list as one of the prime causes for failures the lack of capital. Any company, to conduct a business satisfactorily, must have reasonable access to capital in order to carry on its operations. The most important data from which to form an estimate of the strength in financing lie in the financial statement and its supplementary information.

Many analysts take the stand that the profit-and-loss account is all-important in their analysis. Be this as it may, the fact remains that a proper, reasonable, and complete analysis of these figure facts will reflect the purely financial status and accomplishments of any given subject as of one particular date.

For many years financial statements were read in a manner similar to the reading of the morning paper. That is, they were scanned and then relegated to a file, never to see the light of day again, the impressions gained being stored away in the mind of the analyst to create a subconscious knowledge against which, or by the general use of which, the analyst hoped to expand his "hunch" into something a little more accurate. More lately a much more intensive use has been made of these financial data. A number of analysts have believed that an attempt was being made to overemphasize the importance of the figures to the elimination of any reliance on the personal factor. This is wide of the mark, but it has become increasingly evident that in making up a credit decision it is of at least equal importance to the personal factor that a full and complete analysis be made of the financial factor. Only in extreme cases can a subject succeed with an abundant supply of one and no supply of the other. An easy financial position gives an inefficient management a longer lease on commercial life because the management has more to lose before becoming embarrassed. But business may run through fortune, and commercial inefficiency will end only in disaster. On the other hand, even the most efficient individual would find it difficult to enter into business with no capital.

The greater the mercantile ability the less the financial strength necessary to keep afloat, because the ability will find ways and means of meeting the various strains as they present themselves. Of course, the ideal situation is one in which there is a proper and reasonable supply of both capital and brains. From the standpoint of eventual success both are essential, and to avoid any emphasis on either it would seem reasonable to classify them as of equal importance. This is the premise from which we start in developing and explaining the method of analyzing the statement or financial factor.

PERSONAL

While the preceding sections have laid down as a premise that the financial and personal factors of any credit risk are of equal importance, they contained no real discussion of the financial factors. The reason for this is obvious since this whole book is to be the treatment of this factor in all of its phases, from an analytical viewpoint. It is fitting, however, to discuss briefly those points which are essential to an understanding of the personal factor so that its importance may be recognized.

In credit literature there is an alluring alliteration, "Character, Capacity, and Capital." One also finds reams written and talked concerning "the moral risk." In an effort to write alliterations the real underlying personal factor is often obscured. Perhaps, properly defined, the word character might include all of the elements making up the personal factor. If the word is used to express the possession of a fine integrity, a high sense of honor, and a liberal supply of brains and driving power, then we can use "Character" as an expression of the personal factor. If, on the other hand, it means simply a clean stuffing to a hard-boiled shirt that may look like a man and be an honest tailor's dummy, then the word is useless.

The same thing applies to the "moral risk." It is neither common sense nor good business to loan money or extend credit to a business child, no matter how honest he may be. Any funds so loaned may easily be lost through unsound investment, even with perfectly honest intentions and simon-pure morality. If dishonesty is evident in the personal factor, credit should be denied and no credit problem exist. Therefore, honesty is not really a part of the actual credit problem as it must be a sort of prologue to the main play. For this reason the alliteration, recognizing its own lack of anything definite and complete, adds capacity to character. This is a convenient thing for the alliteration. What is needed is honesty of intent and purpose coupled with ability of performance. This is the personal factor.

Having satisfied himself of the integrity of the borrower, which, after all, is a study of the history of the subject and his associates, the analyst or credit man accepts the case for analysis. This question of integrity needs an underlying analysis of the history rather than a surface inspection. A case in point may be interesting.

A certain man was at the head of an apparently prosperous company. He was actively interested in civic affairs and church matters. The Better Business Bureau was one of his interests and he was an active member in several leading clubs. Socially he held an enviable position and gave every appearance of being highly upright, successful, and a really fine "moral" risk. As a result his company's account was sought after and given liberal lines of credit. One old credit man remarked that he was not interested in the account because he could not understand how it was possible for the company to prosper with the head spending so much time on outside interests, and anyway he did not believe the man could afford it. Suffice it to say that the company failed after the individual had issued a false statement. The "hindsight" experts knew it all the time after the failure, but before it they had loaned money to the company, extended credit to the individual, fawning on his social prestige. They read the moral risk superficially and suffered the consequences.

Many expert artisans who have excelled in their trade and who by their thrift have accumulated a little capital may decide to become managers. They may have the power of fabrication, but too often they lack the art of finance. Such ventures are often, if not always, destined to failure. The granting of credit to such a man is not really a favor, but more likely is just an added temptation for him to undertake something for which he is not equipped. Too easy credit is perhaps worse for a man than credit a little hard to get, because it tends to help him overreach himself. A good example of this type of credit mistake is often found in the printing trade. After having learned the mechanical technique of printing and also having saved a little money, the individual decides to be a boss printer and set up a shop of his own. He goes to a house that sells presses, type, and the other necessary mechanical goods and, using some of his money and by giving a number of serial notes, becomes theoretical owner of a press and its fittings. To save money this is set up in his home basement. From this time on the struggle begins and he finds out something quickly about the fierceness of business competition. As a printer he is unknown and the jobs he can get are small, rather far between, and to get them at all he has to shave prices because he cannot get business on a quality basis, as he is an unknown from this standpoint. In the shaving of prices such a man often makes a sad mistake and, due to lack of any accounting knowledge, does not figure his labor cost correctly. As he is doing most of the work himself, he is fooled on this cost. In the end he is lucky if he can continue to exist with a bare living scraped out of hard work in the place of the steady pay check he received as a workman. Such a man had all the necessary mechanical ability. He had frugality or he could not have saved up his original stake. His association with the industry had been manual, not mental, and had not given him any ability to manage.

The problem of estimating the strength of the personal factor in a new venture often presents itself for consideration. Take a case, for example, of a new wholesale house in the dry-goods line. In many instances such a new organization might easily be short of capital when compared with older houses. There an accurate estimate of the personal factor might play a controlling part in the decision. The prospective creditor must assure himself that the new house has a reasonable certainty of commanding a knowledge of where, how, and when to buy, an acquaintance with the markets for its merchandise, and some skill in the technique of credit granting and collections. To this end the banker should examine closely into the experience of the executives in order to be able to form a judgment as to whether their training has properly qualified them to attain success. This balance of ability rather than a striking personality is most important. The writers remember a case in the wholesale dry-goods line where the office man of a successful company, a sales manager of another company, and the buyer of a third company united and pooled their savings and brains. The resulting company had only a moderate capital, but by frank cooperation with their bank they were able to get support on the fairly well demonstrated ability of the men. They were checked rather more frequently than an older house, and were asked to keep their bank closely informed of all commitments. Quite wisely, they had sought the bank's advice and the personal factor gaining the bank's support made success possible.

INSURING THE PERSONAL FACTOR

The retention of proved personal ability in the operations of a company or the payment of the obligations based upon it is not infrequently of vital importance. While a risk may be considered as good under certain management, the loss of this management may well affect the risk so adversely as to make payment of debts important. This kind of contingency may exist in connection with either a new venture or an old-established one.

One kind of insurance of the personal factor is the building up of a secondary personal factor in the form of well-trained assistants. As far as the continuation of the operation is concerned, this is almost the only method of certain and sure insurance. To resupply ability upon the death of an executive the trained assistant is the most logical answer. With this in mind, the creditor must remember that there is no certainty that brains and ability will descend unto the third and fourth generations or even into the second. Externally a son may be the living image of his father, but his brain power may be of a much lower order. The creditor must know something tangible about the training and aptitude of the understudy. If these are good, then some assurance of continued success is probable.

While adequate preparation for maintaining ability, as above mentioned, is essential to the continuation of a successful operation, the creditor can, in a large measure, protect his account by insurance. While this process might not be feasible to the protection of small commercial accounts it is distinctly so in connection with such size loans as normally appear on the books of banks. Given a situation in which the bank feels safe in extending a credit in the face of a deficient financial set-up because of its confidence in the ability of the management to earn its way out, and disregarding the development of an understudy, the bank may still protect itself by insuring the life of the managing element and taking an assignment of the policy. Under such an arrangement the death of the person on whose ability the loan was made would put the bank in funds to cancel the loan. Subsequent future commitments or arrangements could then be made without any embarrassment because of an existing debt.

Many loans have been supported by just such an arrangement, which, while protecting the creditor against the death of management, leaves a serious gap in the protective feature. Suppose that a loan has been made on the strength of the ability of some individual, protected by the assignment of a straight life insurance policy. If the individual lives he may equal his expected performance and earn out the situation. But what would be the protection under such a policy if the individual suffered a mental collapse, nervous prostration, or some physical accident that incapacitated him as far as management was concerned but which did not kill him? The insurance would not be paid until death, the bank would not be put in funds, the management ability would not be available, and to all intents and purposes the object of having taken out the insurance would be defeated. The bank would have two courses open to it. Either it could collect the cash value of the policy and apply it to the loan or it could gamble on the death of the insured, pay maturing premiums, and await his death expectantly. Such a contingency can also be provided for by writing the policy correctly.

Use and occupancy insurance in connection with fire insurance is a well-established practice. It is not, however, as general to write a use and occupancy insurance on life in connection with the insurance of management ability. It is, however, possible to effect this protection by having a disability clause as part of the life policy. When such a precaution is taken and in the event of the disability of the insured, all future premiums cease and the insurer pays to the insured a stipulated sum monthly as a disability benefit. The extra cost of such a policy is not extraordinary or excessive, as the table on page 10 indicates.

The second plan above shown provides for annual benefits equivalent to 6 per cent a year on the principal sum. Such a policy fully assigned would return to the creditor the full sum at the death of the insured and keep the loan on a 6-per-cent basis until that time.

The third plan would produce the same yield of interest on the loan during the first year, and in addition thereto provide $1,500 as an amount to be used to reduce the debt. In successive years that part of the $3,000 annual disability

INSURANCE FOR $25,000 AT DEATH

Ordinary Life or Whole Life

	Age 30	Age 40	Age 50
No. 1. Premium for straight life insurance..........	$564.00	$768.25	$1,140.25
No. 2. Premium for life insurance with disability providing income of $1,500 per annum......	$594.13	$813.25	$1,216.25
Increased cost of No. 2 over No. 1.................	$ 30.13	$ 45.00	$ 76.00
Percentage of cost increase	5.34%	5.86%	6.66%
No. 3. Premium for life insurance with disability providing income of $3,000 per annum......	$624.25	$858.25	$1,292.25
Increased cost of No. 3 over No. 1.................	$ 60.25	$ 90.00	$ 152.00
Percentage of cost increase	10.68%	11.71%	13.33%
Increased cost of No. 3 over No. 2.................	$ 30.12	$ 45.00	$ 76.00
Percentage of cost increase	5.07%	5.53%	6.25%

(Note.—The figures for premiums, above noted, were taken from an article appearing in the March, 1924, *Bulletin* of the Robert Morris Associates entitled "Insuring Capacity," by Mr. H. Gordon Hurd, B.A., A.I.A., P.A.S., assistant actuary of The Fidelity Mutual Life Insurance Company, Philadelphia, in which this subject was discussed.)

benefits to be used as interest would be decreasing in amount, and the part to be applied against the principal an increasing amount. Under the assignment of such a policy the bank would bridge the gap existing when a straight life policy is pledged and have in place of it a productive loan with a certain amortization period.

When financial structure or strength demands a complete reliance on the human factor and insurance is invoked to protect the creditor in the continuation of this factor or payment, some such complete insurance is recommended, as the percentage increase in cost is not excessive.

Of course the initial cost of insurance protection may seem high when figured in the cost of money to the borrower. The following tabulation is based on insuring the life of a man fifty years of age to protect a loan of $25,000 in a 5-per-cent market.

5% interest on $25,000................	$1,250.
Insurance premium, $25,000...........	1,140.25
Cost when partially protected..........	$2,390.25
Percentage of $25,000—9.56%	
Additional premium for disability protection and $3,000 benefit per annum...	152.00
Cost when fully protected.............	$2,542.25
Percentage of $25,000—10.16 %	
Additional percentage of $25,000 for full protection .6 %	

GENERAL BUSINESS CONDITIONS

Business activity is unstable. It is increasing in intensity, decreasing or hesitating, apparently, at a point of feverish activity or stagnation. It may seem to stand still, but the economic forces of supply and demand, coupled with the eagerness or timidity of the individual, are constantly developing stresses that result in continual change in business activity. For our purpose there are two general sets of such changes. The first of these are of short duration, following the changes of the seasons. These are so rapidly recurrent as to be secondarily dangerous. Business must handle its inventory so as to hold it in some reasonable relationship to seasonal consumption. The second set of changes are those which are built up more slowly and whose major peaks and valleys may be separated by several years. This major swing has been called the business cycle.

Books, pamphlets, speeches, and theories without number have been built around this phenomena. Innumerable schemes have been designed to curb its extremes. The reader is referred to this literature for a full and complete study of this branch of economics, as it would be too extended for discussion here.

The workings of the cycle, however, have a direct bearing on the problem of the credit man and should have an influence on his credit decisions. To establish the exercise of this influence is our desire. The credit man who disregards the influence may be losing profits only or he may be losing the principal of his loan.

In any given line of business the activity of any one unit generally has but small influence upon the whole picture of the industry. To make this statement more concrete a study of thirty-six manufacturers of men's shoes, as of December 31, 1925, indicated a combined inventory of $84,498,000. This is taken from one of the "Statement Studies" of the Robert Morris Associates. One of the companies in this aggregate had an inventory of $847,644. This company exerted an inventory effect on the aggregate then of about 1 per cent. The general proportions of this one company's statement approximated closely the proportions of the industry, as shown by this rather limited sampling. For example, its merchandise was about 33 per cent of its total assets and the combined inventory of the group was about 35 per cent. Even in this group of companies the entire elimination of the inventory of this company would have affected the whole situation to the extent of only 1 per cent. Its possible effect on the whole industry would, of course, have been much less than this. This is mentioned merely to indicate in some concrete form how little the conservatism of one management may affect a whole situation.

On the other hand, the inventory situation of the industry is cumulative and would have an overwhelming affect against the individual. If the inventory situation of the industry became badly dislocated so as to create a surplus of merchandise resulting in rapidly falling prices, this single company would suffer even against the puny efforts of its own management even if these had been considered conservative. The ills of the industry have a direct bearing on the individual, so, therefore, the general condition of business, or the cycle, is decidedly something to consider in extending credit to an individual company. To allow an expansion based on credit toward the end of a period of prosperity or just before a crisis would not be an act of kindness.

On the upswing of business activity competition in selling declines as the competition for buying increases. The big problem of this phase is to produce goods. As a related condition we find margins between costs and prices widening for the most efficient producers, which brings about a condition in a manner akin to bringing into production less fertile soils, in similar times, under the operations of the old law of economic rents. The stimulus of demand in raising prices makes it possible for a number of less efficient plants to enter into production. Their percentage of profit may be narrower, but with less need for considering costs and a wider difference between efficient costs and prices the less efficient may exist. While fraught with some extra hazard, loans may be made temporarily to such units under rigid inspection. Some of these units when wisely advised may even be shaped up to last through the recession period.

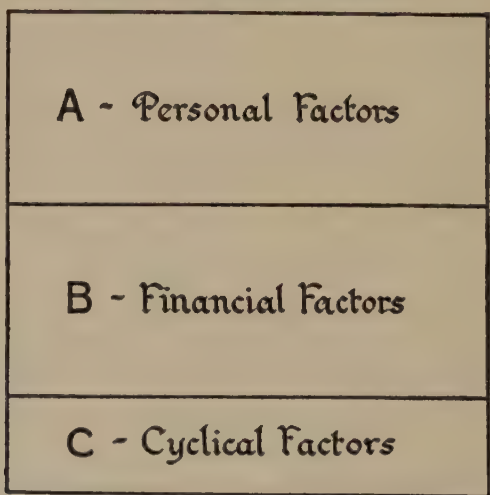
CONCLUSION

Personal ability and driving power, financial strength and the stimulus or ravages of business conditions, all affect the strength of any credit risk. The first two of these elements are probably, on the average, of equal importance. Business conditions, the swings of the cycle, while having an effect, are of lesser importance. This is true because the abundantly strong company can, so to speak, live for quite a time on its own fat, and because a management of more than average ability will find ways and means of easing the cyclical strains. Both may not operate at a profit, but both may live. Inasmuch as a company can often successfully combat the stress of the business cycle, it may be reasonable to assume that the effects of general business on a risk are about one half as significant as proper financing and proper management.

All this may seem too technical. It is, however, necessary to get some fundamental conception of the relation of all three factors so that no one will be overemphasized or relied upon too heavily.

The next thing to do is to express these relationships in a graphic manner. If the credit decision were to be called 100, then by assigning a 40-per-cent value to the financial facts, a 40-per-cent value to the personal element, and a 20-per-cent value to the cyclical facts or business condition, this relation might be reduced to a graph form as follows:

The Credit Decision



In the above graph "A" represents 40 per cent of the whole square, the credit decision, and covers all data having to do with the personal factors. "B" also represents 40 per cent of the whole square and covers all the financial factors found largely on the balance sheet, the profit-and-loss account, and supplementary data. "C" represents 20 per cent of the whole square and covers all facts having to do with the general condition of business outside the company's control but having a direct effect on its credit strength and eventual success.

The remainder of this book will be devoted primarily to a complete and technical discussion of those factors which lie in the "B" area.

CHAPTER II

STATEMENT NOMENCLATURE—ASSETS

DURING the past ten years there has been a tremendous increase in the attention paid to the technical analysis of financial statements. There are several prime reasons for this greater appreciation of the possibilities in sound statement analysis.

The first of these is that the financial statement is the most important exhibit of record and achievement which the borrower himself can produce. Other elements of a credit risk, such as character and capacity, are indirect and intangible. They are hard to record, but the progress in material success is definitely recorded in the financial statement.

A second reason for increased emphasis on the analysis of statements is a keener appreciation of their ability to reflect management capacity and even, indirectly, management ethics. Statements formerly were accepted for rather superficial inspection, which brought out only the more obvious points of information which they contained. Little by little analytical technique has developed the methods of reading statements, so that the larger values to be found in them have been increasingly appreciated. It seems somewhat forced, but is nevertheless true, that the closer reading of statements has brought about the closer reading of statements. This closer reading was at first experimental laboratory work carried on by only a few restless minds who were not content to follow precedent. Their experiments at closer readings began to extract more information from the statement facts and throw light on phases of the risk not previously possible of recordable interpretation. Subject to the inertia that is always present against change, the general closer reading of statements has come slowly into practice.

This country has conducted its business for many years through the medium of credit. In fact, from 80 per cent to 95 per cent of the commercial transactions, it is estimated, are effected by the use of credit. Monetary history has a literature both of theory and of recorded facts. Facts have been massed, coordinated, averaged, and generally treated in volume form. And yet ordinary currency, about the manipulations of which this history has been written, is only used at the most in say 25 per cent of business dealings. There is a fine literature on the theories of credit as a force, but a limited amount of recorded financial facts about the basic wealth that is the foundation for this structure.

The most accurate facts in the field of credit and credit-granting are those appearing in the financial statements of operating commercial enterprises and also in the statements of failures. Credits rather than credit have been studied by the use of the facts appearing on these statements, because only a very little has been done to mass and marshal these facts. Few data are digested and available in comparison with the supply of data existent. Analysis in the field of credit is highly individualistic, so far as the facts are concerned. There is as yet little or no credit science, because science demands coordinated rather than individual handling of facts.

The common practice of statement analysis is based on a chronological and sequential tabulation of statement facts on one subject, a single name. The sequential tabulation of dollar figures of assets, liabilities, sales, and occasional profit-and-loss results, coupled with a vast amount of inference and inspirational guesswork without accurate backgrounds to serve as guides, has developed a belief in credit sense or hunch or guess.

Credit-granting is far from a science, but some small beginning has been made experimentally. Undoubtedly many adjustments will have to be made for error in present methods, but fundamentally the basis that the law of averages is a reasonable measure for expectancy seems sound.

This book is prepared on the principle that the intelligent granting of credit rests on three tests: First, the fair and proper preparation of the individual statements, together with a proper standardization of the meanings of terms and usage of nomenclature. Second, a fair and sound method of analytical selection of typical data. Third, the application of the principles of analysis to this data.

With this in mind we propose to discuss accounting nomenclature and the use of terms, the responsibility for the proper preparation of statement facts, the analysis of these facts from both a single and a massed viewpoint, and the preparation and use of background data. In the last two instances we shall attempt to supplement the theory by test cases from actual figures. In this statement figures of a public type will be analyzed both as against their own progressive position and as against massed data. There will be no breach of credit confidence because data from the public press will be used which is available to anyone. No comment will be made either to laud artificially or to condemn unfairly. Only evident dislocations or readjustments and financing manipulations will be discussed.

ASSETS

The importance of the balance sheet in the determination of a firm's credit goodness has increased tremendously during the past ten or fifteen years. Not many years ago banks hesitated to ask a borrower for a statement, and while such is the case in some instances even today, it is not the rule but the exception. It may be bold to say that banks which do not generally require a financial statement from their borrowers are backward and not fit institutions with which to do business, but this is the authors' opinion. Such banks are not only depriving themselves of information to which they are rightly entitled, but they also are unable to give to their customers the benefit of their knowledge of general business conditions and financial management.

No attempt will be made in this volume to go into great detail on the various items appearing on the balance sheet. There are so many excellent books written on the subject that any further development would be more or less a duplication of work already well done. The purpose of this volume is to explain the system of ratio analysis, and covers such related subjects as are deemed necessary for a complete explanation of the system. However, we will examine the more common items found on the balance sheet, and develop a method of handling them for the purpose of analysis by a bank credit department.

For the purpose of this work, the balance sheet will be condensed into the following general headings, having in this set-up the main essential items for analysis so grouped as to be readily usable. This condensation is for departmental use and practice, and it is not suggested that borrowers fill out such an abbreviated form. The borrower statement should be the customary detailed report, copies of which will be shown elsewhere.

Assets	Liabilities
Cash	Payables
Receivables	Taxes
Merchandise	Miscellaneous
Listed securities	Total Current
Miscellaneous	Funded debt
	Mortgages
Total Current	Total Debt
Plant and equipment	Reserves
All other non-current assets	Capital
Total fixed	Surplus
Goodwill, trade-marks and patents	Net worth
Treasury stock	
Total	Total

CASH

There seems to be no great need for an explanation of this item. However, in the condensing of balance sheets by various bank credit men, there is apparently a difference of opinion as to what constitutes cash and what does not. This is true in the statements of the larger companies almost entirely, and arises, no doubt, from the temporary investment of surplus cash in certificates of deposit, call loans, or cash balances in foreign countries. These may be handled as cash by some analysts and accountants and treated as separate items by others.

Cash includes the funds on hand used in petty expenditures from day to day. This is known generally as "cash on hand." The rest of the cash item is "cash in banks." This, of course, should include all cash on deposit in banks which is subject to check. These two items in the majority of cases make up the item appearing as cash. It must be emphasized here that only cash on deposit subject to check can be included in this item. In cases where a firm has made a separate deposit to take care of certain current liabilities payable in the near future, such as dividends or taxes, there seems no good reason why this should not also be included in the cash. There is no real difference between putting aside such funds out of regular cash for specific purposes and keeping it in one account. Any deposits, however, to be used for the retiring of stocks, or bonds, or for any other purposes—in short, building up a sinking fund—should not be included in cash. Also savings accounts and certificates of deposit should not be included in the items of "cash," as they are not subject to check. Neither do I O U's held by the company against employees fall into this classification. Such time cash items should be listed under a heading separate from cash and their character designated.

RECEIVABLES

This caption represents a condensation of several items which are as follows:

Accounts receivable, customers
Notes receivable, customers
Trade acceptances

Receivables should represent only claims against persons or firms for goods sold. The receipts for these goods are generally presumed to be in money or equivalent, which distinguishes them from those for which services are expected. These latter are in the nature of prepaid expense.

Accounts receivable are claims represented by open accounts for goods sold. To be current they must include only those accounts arising from the sale of goods which the company fabricates or handles in trade. Accounts due from officers, directors, employees, and stockholders are not included as current.

It is well in many cases to analyze the accounts according to due date. Those accounts that are past due or doubtful of collection should be taken out of the current receivables and placed among the non-current assets. For the purposes of analysis work it is not necessary to make any other divisions than "good" and "doubtful."

Notes receivable are written evidences of debts. These notes, as the open accounts, should be only for merchandise sold. In some industries payment by note is a common practice, in which case one expects the item of notes receivable to be substantially higher than accounts receivable. In those instances where open accounts are the usual practice, the notes receivable item should be smaller. It is suggested here that the custom in the trade be investigated, because if the practice is to carry customers on open accounts, any large amount of notes probably means that open accounts are being closed with notes, which in turn indicates a slowing up of collections and possible writing off of bad accounts. In a line of business in which buying on open account is the common practice a creditor company resorts to demanding a note, or a visible indication of debt, often as a means of forcing collection. It may, however, be introduced in order to get a negotiable instrument for ease of hypothecation, either honestly or to defraud the company's own creditors. Therefore, an investigation of the method of payment in the trade is advisable.

Trade acceptances are customary in many lines of industry. They are generally similar in effect to notes, and for purposes of analysis are identical. As they are practically identical from an accounting and analysis standpoint, no additional comment need be made except that an analyst should feel no alarm if the item of trade acceptances is larger in some companies where this is the usual method of payment. But in such instances there naturally would be fewer accounts receivable. One object of the condensed grouping for analytical purposes is to combine all those assets resulting from sale of goods into one total.

INVENTORIES

Probably no item on the balance sheet permits of so much juggling and misrepresentation as does the inventory. By inventory is meant the goods on hand ready for sale, in the process of manufacture, or in the state of raw material, better known on the statements as finished goods, goods in process, and raw material. This of course applies to manufacturing concerns only. Goods held for sale or which are to be converted so as to be salable are part of the inventory item. In some instances supplies used in the process of manufacture are also included, but this practice can only be even partly justified where the amount is small. Otherwise these are best shown as a prepaid expense and placed among the noncurrent assets.

It is not really good practice to include any supply item but the practice is at times indulged in by accountants. Where such a procedure occurs the credit man is allowing the accountant to function in his, the credit realm, by that deviation from really sound practice.

The valuation of the inventory should be on a cost or market basis whichever is lower, and this phrase should be clearly shown on the statement. In the taking of inventory, care must be exercised so that no merchandise is included in the inventory that is not of a current nature. If the auditor verifies the inventory he must see also that no stale merchandise is included in the count, and in his certificate should carefully set forth the extent to which he went to ascertain the correctness of the inventory. No one can better determine whether or not an inventory is balanced than the accountant if he makes a physical count of the inventory. It hardly seems too much to ask an accountant to determine this balanced or unbalanced position.

THE FOLLY OF BARGAIN BUYING

Bargains often prove to be wasted money. Too often the purchasing agent or buyer is overenthusiastic about certain merchandise, and because of an apparently low price he buys more than he can possibly dispose of. This, of course, is true more often in a wholesaling or jobbing house. However, this error of poor buying can be just as disastrous to the inventory situation in a manufacturing concern because of the unbalanced condition of the inventory at statement date.

BALANCED INVENTORIES

Let us assume the manufacture of a mechanical device requiring eight different kinds of parts, and the following schedule of pieces required to make the completed assembly:

Part	Value per part	Physical inventory	Value of inventory	Parts required for one complete assembly	Inventory value one complete unit	Nine complete units possible or present inventory determined by E	Inventory value nine complete units	Surplus parts	Value of surplus parts
Column 1	2	3	4	5	6	7	8	9	10
A	$100	16	$ 1,600	1	$100	9	$ 900	7	$ 700
B	25	40	1,000	3	75	27	675	13	325
C	25	35	875	2	50	18	450	17	425
D	5	55	275	5	25	45	225	10	50
E	200	9	1,800	1	200	9	1,800	0	0
F	15	120	1,800	10	150	90	1,350	30	450
G	10	90	900	8	80	72	720	18	180
H	5	500	2,500	25	125	225	1,125	275	1,375
			$10,750		$805		$7,245		$3,505

This is a purely theoretical case, but illustrates the necessity for careful examination of the balance in the inventory. There are eight parts A to H, inclusive. The number of parts required to make one assembly are listed in column 5, while the actual physical count of the inventory appears in the third column. Parts A and E are the expensive parts in each assembly, the dollar value of each part appearing in column 2. It will be observed that it is possible to make only nine complete units with the inventory on hand, because there are only nine pieces of Part E.

The total parts required for the nine units are listed under the seventh column. The ninth column gives the excess parts, which shows how unbalanced the inventory really is in physical count, while column 10 shows the dollar value of these excess parts. Theoretically to balance this inventory and utilize all parts it is necessary to make purchases of additional units as per schedule on page 25.

This, of course, would not happen in actual practice, because item H, the least expensive, would hardly determine the future purchase of parts. However, if we take

Part	Value per part	Physical inventory	Parts required for one complete unit	Parts required to make twenty complete units determined by H	Inventory value twenty units additional	Parts required for twenty complete units	Value of additional parts required
Column 1	2	3	4	5	6	7	8
A	$100	16	1	20	$ 2,000	4	$ 400
B	25	40	3	60	1,500	20	500
C	25	35	2	40	1,000	5	125
D	5	55	5	100	500	45	225
E	200	9	1	20	4,000	11	2,200
F	15	120	10	200	3,000	80	1,200
G	10	90	8	160	1,600	70	700
H	5	500	25	500	2,500	0	0
					$16,100		$5,350

Part A, another expensive item, as a basis, then seven additional pieces of Part E must be purchased, to say nothing of the other parts making up the completed unit. The true effective value of the inventory is not $10,750, but lies rather between the value of the total complete parts possible of fabrication valued at $7,245 (total of column 8) and $10,750—the point at which additional purchases will make most effective use of the inventory on hand. The practical assembly value of this inventory is $7,245, or the dollar value of the possible complete assemblies, plus the junk value of columns 9 and 10. If a semifinished inventory such as this could be liquidated at 20 per cent, this would represent about $700, which, added to the value of column 8, would indicate a fairly easy liquidating value of around $8,000, or about 80 per cent of the listed inventory item. Of course such an underlying condition would have an effect upon the current ratio.

If, on the other hand, it was decided to buy enough extra parts so as to work out the entire inventory, it would be necessary to expend $5,350 in the purchase of additional parts. This process would require additional advances. If this were done it would materially lower a current ratio and a worth to debt ratio. It would also be reflected in a decline in the ratio of sales to inventory.

Such a lack of balance might easily be the result of window dressing to bolster up a weak position by curtailing the purchase of costly parts temporarily.

This illustrates quite clearly the need for balance in inventory. It makes no difference which part is used as a basis for measuring output, additional purchases must be made in rather large amounts to make effective use of the inventory. While there is no way of showing such an unbalanced condition on the statement or the amount of liability necessary to be incurred to utilize the entire inventory, it is a vital point in analysis of a company's financial condition.

An incident comes to mind of a condition similar to the above. An automobile company asked for additional accommodation, and an examination of the plant was made. The examination disclosed row after row of cylinder blocks, but an apparent scarcity of crank shafts. Inasmuch as it requires one of each for an automobile, the treasurer was asked why such a condition was allowed to develop. No satisfactory explanation being forthcoming, the company was considered too loose in its purchasing methods, and not only was the additional accommodation denied, but they were asked to pay up their then indebtedness. Within a year the company went into bankruptcy and is no longer in business.

LISTED SECURITIES

There is no doubt as to the ready convertibility of United States Government bonds into cash, and therefore the logical inclusion of such among current items. Other securities to be so considered must have an available open market on which they are traded in regularly and in sufficient volume to absorb any reasonable amount, as may appear on any statement, before they may be classified as having cash availability. Securities with no recognized market listing or of extraordinary amount in relation to daily tradings had better be considered as noncurrent assets for the sake of conservatism.

QUICK, CURRENT, AND LIQUID ASSETS

At this point it might be well to distinguish between these nomenclatures. It is usually understood that "current assets" are those which in the ordinary course of business turn into cash readily. "Quick assets" are those readily converted into cash. Listed securities are converted as readily probably as any item on the balance sheet after cash; they are quick, but not current. No part of the operation of the business involves these securities. This distinction between current and quick is not strictly adhered to. Many accountants and bank credit executives make no distinction, and there is some doubt as to the real value of such separation. When a firm invests in listed securities it is usually because it has a supply of cash over and above its current needs, and in order to get a better return than they would receive from a bank. It seems for this reason that theoretically they are cash, temporarily invested so as to be productive. The company is thus kept in a readily liquid position, so that from the point of view of actual liquidity and goodness there seems no good reason for distinguishing between a "quick" and a "current" asset for this item.

It is perhaps proper to question the true need for borrowing when such securities are among the assets.

Another familiar term in this connection is the "liquid" asset. This is often used interchangeably with either "current" or "quick." There seems, however, that there may be a distinction here and that in some instances an asset

may be quick and liquid, but not current. When liquid assets are suggested, we think more often of assets in liquidation of a company's affairs rather than assets of an apparently healthy going concern. In this connection there is an item of cash surrender value of insurance policies which is a liquid asset but is not current.
(See other noncurrent assets)

PLANT AND EQUIPMENT

The importance of this item is largely dependent upon the type of industry. The ownership of plant and equipment as it is usually thought of is not customary in the statement of purely trading companies. By plant and equipment is meant the real estate, buildings, machinery, and fixtures necessary to the proper carrying on of the concern's business.

In a number of industries it is common for the fixed assets to make up well over 50 per cent of the statement total. Examples of this are the cotton mills, which run 57.26 per cent in the North to around 66.75 in the South. It was for a time, and to some extent still is, customary for bank credit men to figure a certain amount per spindle as of a current nature at least as a mental reservation. This tying up of so much of the total assets in a fixed form naturally has its effect on the current ratio, which, if no spindle allowance is made, runs 205 in the North and only 136 in the South. The statements of lumber mills naturally have high fixed investment running as high as 74.67 per cent in 1923 and 73.19 per cent in 1924.

The following list gives an idea of the importance of fixed assets in some of the industries studied by the Robert Morris Associates. These are percentage figures and are obtained by dividing the fixed assets by the total assets of a number of companies in the various industries mentioned.

	1923	1924
Department stores	39.38	42.98
Furniture manufacturers	41.87	49.55
Knitting mills—hosiery	40.12	44.19
" " —underwear	37.25	37.77
Lumber yards	41.85	46.40
Milling companies—flour	—	43.56
Packers	50.99	52.08
Paper mills	—	76.90
Tanners	44.30	44.83
Tire manufacturers	56.56	58.94
Automobile manufacturers	53.78	50.97

These are a few of the industries which show the investment necessary in fixed assets. In contrast to this some of the purely trading industries run as follows:

	1923	1924
Wholesale dry goods	11.33	15.02
Wholesale grocers	23.20	23.17
Wholesale hardware	16.70	25.55

METHODS OF SHOWING FIXED ASSETS ON A STATEMENT AS REGARDS MORTGAGES AND DEPRECIATION

There are differences of opinion as to how fixed assets should be shown on the statement. It seems to be rather a common practice to show fixed assets net of depreciation in totaling the statement. This practice is perfectly acceptable if the deduction is shown on the statement. However, it is not uncommon for the accountant to show fixed assets net of depreciation and no mention of the amount of the depreciation made. Some statements have come under the observation of the writers on which the fixed assets are shown net of depreciation and mortgages. This is absolutely incorrect, and should be frowned on by accountants and bank men. The amount of the mortgage may appear as subsidiary information; at least it can be determined by inquiry; but there is no good reason why any outstanding mortgages should be so shown. It is merely confusing, and if an oversight is made and no account taken of the debt, an analyst may pass a bad statement as reasonably good. The mortgage against the fixed assets should appear among the liabilities.

The method approved for showing the item of plant and equipment should be something like the following:

Land or real estate..........		$50,000	
Plant and equipment or buildings and machinery........	$100,000		
Less depreciation reserve.....	25,000	75,000	
Total..................			$125,000

The basis for showing the reserve in this way is that the total assets are thereby shown in the smallest realizable amount in dollars rather than the largest. It might be argued from the same angle that mortgages should also be deducted. However, a mortgage is a definite liability certain to require payment at some later date, and as such should be shown on the liability side. The reserve for depreciation of plant and equipment is not a liability in any sense of the word, but is a reduction of the value in the asset due to use and obsolescence, and may therefore be subtracted from the offsetting asset account.

Other statements show this item of depreciation reserve between the funded debt and capital stock. Which of these two methods is the better will be discussed later under "Reserves." The method of listing on the liability side was used on the statement shown earlier in this chapter—the item of reserves including numerous kinds found on the balance sheet.

OTHER NONCURRENT ASSETS

This may be called more or less of a dumping ground for items that cannot be better classified and is usually a hodgepodge of accounts which includes some or all of the following items:

Accounts and notes due from officers, directors, employees, stockholders or affiliated companies
Stock investments in subsidiary or allied companies
Miscellaneous investments of noncurrent nature
Cash surrender value of life insurance policies
Deferred charges
Prepaid expenses

DEFERRED CHARGES AND PREPAID EXPENSES

It might be well to distinguish between deferred charges and prepaid expenses at this time. Deferred charges are expenses incurred in organization, the establishment of goodwill, or for services received during a period the total expense of which is not to be charged wholly to one fiscal period, but written off over a series of years. Prepaid expenses are amounts spent in advance of present requirements but for which future service will be received. The distinction in brief then is that the service has been received in the case of deferred charges, while in the case of prepaid expenses the service equal to the amount of the prepaid expense item has been paid for and will be received in the future. Such a distinction is not necessary if the amount of prepaid expense is insignificant, but where the account really is of substantial amount such a segregation should be made.

ACCOUNTS AND NOTES RECEIVABLE FROM OFFICERS, DIRECTORS AND EMPLOYEES

Accounts and notes due from officers, directors, and others connected with the business are sometimes classified between the plant-and-equipment account and the quick assets. This procedure is followed in the statement recommended by the Federal Reserve Board in their pamphlet "Approved Methods for the preparation of Balance Sheet Statements." This article was reprinted from the Federal

Reserve Bulletin of April, 1917, a copy of which is shown at the end of the next chapter.

There is some doubt as to whether or not this is the correct procedure. It has happened more than once that obligations from officers, directors, and stockholders have been extremely fixed, and when time came to realize on them they were not as good from a liquidating standpoint as the buildings and machinery. Certainly no accounts such as these should be used to bolster up the current ratio.

If a ratio of quick assets to current liabilities is computed these accounts will, of course, not be included, but extreme care must be shown not to include these receivables in with receivables arising from merchandise sales.

INVESTMENTS IN SUBSIDIARIES

Stock investments in subsidiary, affiliated, or allied concerns indicate by their name that they are more or less fixed, because in order to maintain the interest or control these funds must be kept permanently invested. This investment need not necessarily mean a return in actual dividends, but may in some instances give price advantages which more than make up for small or perhaps no dividend return.

CASH SURRENDER VALUE OF LIFE INSURANCE POLICIES

As previously stated, this item may be classified as a liquid asset. It has a 100 cents on the dollar value in case of liquidation, and is as good as the company in which the insurance was taken. However, while in the back of the mind of every credit man is the liquidating value of the assets, the analysis should be made more specifically on a company as a going concern.

Life insurance is taken out on the lives of officers and directors because they have the destinies of the concern in their hands. If they pass on, it may be that the future of the firm is less secure. This insurance is a protection to creditors, especially to bankers who are more insistent on such insurance being taken out than other creditors. In order to maintain this protection, the policy must remain in force, which, of course, will not be the case in event of the firms obtaining the cash surrender value.

Another feature in connection with this asset is that if the firm borrows on it, a current liability is immediately incurred for eighty per cent or more of the cash surrender value, and the realizable value of the policy in event of death is immediately reduced by the amount of the loan and interest.

We appreciate that it is quite common practice to consider this item as a current asset, but we submit the above reasons against this view. Actually, in case of liquidation excepted, the cash surrender value of life insurance policies is as fixed as the buildings themselves.

SINKING FUNDS

Sinking funds are funds set aside at certain intervals for the purpose of liquidating some specific liability. Only a few points will be touched on in this connection.

Confusion often arises over the two accounts "sinking fund" and "sinking fund reserve." The former is the fund in cash securities or interest set aside to meet future liabilities, which is quite the opposite from sinking fund reserve, which is a charge against surplus standing then as a credit item on the books of the company, measuring the amount of surplus which has been segregated to meet the sinking fund requirements.

Sinking funds are not sinking funds if they cannot readily be converted into cash to retire the liability against which they are being accumulated. No investment in the business other than in the purchase of their own securities against which the sinking fund is being built up really constitutes a sinking fund. The mere setting up of a reserve for sinking fund out of profits and leaving that much in the business to add perhaps to working capital, is in no sense a true sinking fund. Immediate liquidity is an absolute essential for the establishment of a proper sinking fund.

This covers rather hastily the more common assets found on the balance sheets. No doubt illustrations can be found which give accounts not here mentioned, but any attempt to cover all accounts or nomenclatures found on balance sheets would be a large assignment in itself and would not be of great value for our purpose.

ENDORSEMENTS AND GUARANTIES

Neither an endorsement nor a guaranty appears as a balance sheet asset, and yet both have the asset quality, in that they add protection to the creditor. This protection may be either as goods or as personality. Because of this some mention should be made of these items.

A guaranty is of course no better than the realizable worth of the guarantor, as a dollars and cents matter. Therefore the careful credit grantor must use the same care in determining the real value of the guaranty as he uses in analyzing the risk itself. Assumption of added strength because of a name is dangerous. An individual may be considered wealthy, but this wealth may be more fancy than real when his own obligations and perhaps widespread loan of his standing through other guaranties is considered.

A guaranty may be exacted from a manager or operator with no little intrinsic worth in order to force upon him a sense of responsibility. It may be used to keep such a manager in a business during the life of a loan because of a belief in his ability to earn out the situation.

Much the same condition exists in connection with endorsements. Just because an individual is in the social register, drives a big car, and lives in the social spotlight is no insurance that either his guaranty or his endorsement is anything more than the ink and paper that constitute its visual existence. The credit man must bore in and see whether real value lies beneath the exterior.

In connection with endorsements the writers quote from the September, 1924, *Bulletin* of the Robert Morris Associates by reproducing an article then compiled in answer to an endorsement question. It covers a condition often overlooked by analysts:

Occasionally the note of a partnership is endorsed by one or more of the partners. As the partners are each individually liable for the debts of the firm, what is the value of such endorsement?

This question is probably asked because of the general belief that a single partner's personal assets are available in order to make good any obligation of the firm, thereby making an individual endorsement unnecessary. There is, however, quite an advantage in having the personal endorsement of the separate member or members of the partnership. Two opinions on this point have been presented by members that are so concise in their presentation that they are quoted exactly as received.

"In a limited partnership, which is permitted in various states, partners are only liable for a specified amount, whereas should they or one of them be endorsers on the partnership paper it makes them individually liable.

"In the case of a dormant partnership the dormant partner would also make himself unconditionally liable by endorsing the partnership papers.

"Where a partner grossly exceeds his authority, say where he takes some of the firm's paper, endorses it, and then uses it to his own personal benefit; and where the person taking same, by the exercise of due prudence should have known this and consequently cannot hold the firm, then he could hold the partner as an endorser.

"In case the necessity of bringing suit arises suit could be brought against the endorser alone and his share of the partnership assets levied upon; whereas in case of suit against the firm all partners would have to be made parties.

"In case of dissolution of the firm, where one of the partners endorsed the paper, the holder could proceed against the endorser without any delay.

"In case of death and consequent dissolution, the holder could proceed against the estate of the endorser."

"The especial advantage of having the individual endorsement or guaranty of a partner on partnership paper relates to an important point of procedure rather than difference in right. Partners are liable individually for all debts and obligations of the firm, *but only jointly,* so that suit would have to be brought against all the partners on the firm obligation and if judgment be obtained, satisfaction for the firm obligation may be enforced upon the individual property of any partner served in the action, and on an equal basis with any other creditors of the individual partner. It is only in cases where a partner has been duly served in an action to enforce a copartnership debt that his individual property can be held also liable for that debt.

"Where, however, a partner has made himself individually liable, as by personal endorsement or guaranty, suit may be begun against him alone, without any necessity for joining his copartners, and his individual property may be applied in satisfaction of the debt.

"The advantage, therefore, consists particularly in the right to proceed directly against a single partner on his individual contract of guaranty or endorsement.

"Where a partnership is in the hands of a receiver in equity, or a receiver or trustee in bankruptcy, a further advantage arises. In equity and bankruptcy jurisdiction the rule of marshaling assets is applied, that is (with certain exceptions not now material), the property of the firm is applied to the payment of the firm obligations and the individual property of each partner is first applied to the payment of his individual obligations before firm creditors will be allowed to share therein. As a result, the holder of an individual partner's endorsement or guaranty shares on a par with both partnership and individual creditors. This rule does not prevail in the ordinary legal action; there, as already pointed out, a creditor of a partnership upon obtaining judgment has rights against the individual partners served in the action equal with those of any individual creditor of such partner.

"The rules to which we have adverted obtain in New York, and, as our study of the authorities reveals, in a majority of the jurisdictions throughout the United States."

CHAPTER III

Statement Nomenclature—Liabilities

Under this heading will be discussed debts most commonly found on balance sheets, including current and longer-term obligations.

On the condensed form appears the single item of "payables." This is intended to cover all current obligations such as accounts and notes payable; acceptances whether due customers, individuals, or banks; obligations under letters of credit; and any other obligation secured or unsecured which must be paid during the next year.

ACCOUNTS PAYABLE

This item covers all outstanding obligations to trade creditors for raw materials or merchandise purchased. In verifying or checking these accounts it is necessary for the auditor to be certain that they are really current, within sales or purchase terms, and not past due which would tend to reflect on the credit standing of the company. Another duty of the auditor in this connection is to make sure that goods received on the latter days of the company's fiscal period have been entered so that they appear as merchandise and a corresponding amount set up as a payable. Goods in transit should also be included in the inventory and payables or attention called thereto. The practice of firms in letting their inventory run off at the end of the fiscal year and on statement date shows a low inventory and high current ratio is a common one. Careful investigation may show in many instances that the company is liable for goods in transit or heavily committed for goods to be delivered at some future date which would seriously change the complexion of the entire statement.

WHEN IS A DEBT CONTINGENT?

While there is a better understanding than formerly, there are still instances in which delayed assumption of inventory liability is not appreciated. For some illogical reason many merchants and their accountants have an idea that it is fair and good practice to omit from the accounts payable the amount due for merchandise bought for a coming season if at the same time they omit this merchandise from the inventory. True it is that in the majority of cases the obligation is now referred to as a contingent debt due to commitment on forward purchase orders. When the obligation is for a future delivery of merchandise there may be just the shadow of justice in this kind of allocation of the debt because the selling merchant may be willing to accept a cancellation of the order rather than to insist on a delivery and the filing of a claim.

While there may be some possibility of justifying the omission from commitment debt, a different condition exists where merchandise for the next season is in transit or perhaps even in the warehouse of the merchant making the statement. It is true that the merchandise is not going to be sold before the date of the statement. It is true that it is not even intended for such sale. But it is equally true that such merchandise is not a gift of the manufacturer. The merchant owes a debt because of it and that debt exists just as soon as the selling transaction is consummated and has no contingency flavor whatever. Imagine an embarrassment occurring on December 29 or January 2. Would the receivers return to the manufacturer any merchandise on hand just because it was for the April or May selling season? It does not seem logical to expect that they would, as ownership would vest in the subject company, and it is to be supposed that this new merchandise being designed for the new season might return to the general creditors, among whom would be the manufacturer, a larger percentage of value to appear as bankruptcy dividends.

This classifying of such accounts payable as a contingency only is about as reasonable as deducting the receivables from the payables because their proceeds are to be used to retire debt. We might even deduct all merchandise from the payables because if it has not been sold at statement date it too belongs to the next season as far as possible sale is concerned. From such things soap bubbles and rainbows are made that do not belong to the more exacting practice of credit granting.

NOTES PAYABLE

This includes notes payable to creditors for merchandise purchased or notes payable to bank. Under receivables it was said that in many businesses it was customary to pay by note or acceptance. Such being the case, accounts payable should be smaller in proportion. Also when a company borrows heavily from banks on its notes it does so presumably to take advantage of the discount offered by the people from whom it buys. It follows, then, that large borrowings from banks should be offset by small borrowings from the trade. Notes secured by collateral should be carefully designated and a schedule of the collateral should accompany the balance sheet.

Other items which come under the general heading of payables are funds deposited with the company, accounts payable to officers, directors, and stockholders, and letter-of-credit liability. Notes payable due to brokers of course come under the discussion of notes payable. The general heading covers notes due to banks, brokers, or the trade.

TAXES

There is no surer liability on a firm's statement than taxes. While it is true that the amount cannot always be definitely decided on the date of the statement, still an estimate must be made in order to approach more nearly the true financial position. In many cases we see the item "reserve for taxes" or "reserve for federal taxes" placed down among the reserves. It is hoped that not many credit men will permit it to remain there. The correct procedure is to place it up among the current liabilities under the theory already stated that it is *the* item which positively must be paid. It is hardly likely either that the reserve for taxes will greatly exceed the amount which is finally paid, so for that reason we do not feel the slightest hesitancy about classifying it as a current liability.

MISCELLANEOUS

Under this heading come all other current liabilities. This includes such items as accruals of all kinds—wages, rent, interest, and other accounts which overlap the fiscal period. It also includes dividends which have been declared but are not payable until some time after statement date. This means "reserve for dividends" declared but not paid.

Any liability for legal expense or damages should be shown as an accrued expense. Damages may be covered by insurance, but in cases where there is no insurance, some estimate must be made by the auditor after he learns the facts and this must be set up on the statement.

CURRENT OR FUNDED DEBT

Just as a current asset will turn into cash in the near future, so a current debt is a debt that will reach maturity in a short time. The normal limit of maturity is within one year. Such a debt is commonly called current.

A funded debt is a debt that has been created for funds, the maturity of which is definitely set more than one year from statement date. Generally such maturities at the start are more than two or three years away and in many instances from five to thirty, forty or even ninety years.

When a debt of seeming remote maturity matures serially, then that part coming due within approximately one year should be segregated and listed as a current liability.

BONDED DEBT

No attempt will be made in this volume to define the many kinds of bonds issued which range from the finest type of security down to bonds that are little better than preferred stock, such as income and adjustment bonds.

It is the practice of some companies to deduct the bonded or mortgage debt from the fixed assets showing them net. This practice is not good from the standpoint of the credit man, and he should of course change the set-up of the statement to show the liability. The writers are glad to say that such statements are in the minority, but it hardly seems reasonable that any auditor would set the statement up in this manner.

It is the duty of both auditor and credit man to examine the mortgages carefully in order that they may determine whether or not there are provisions covering the point that the company must maintain current assets in excess of current liabilities in a certain amount. If the relationship of current assets to current liabilities as expressed by the current ratio falls below a certain figure the bonds are in default and will be likely to operate against the current assets of the company. This, of course, is of vital interest to the creditors.

If there is a sinking fund operating against the bonds it is necessary that the credit man make certain that the stipulations covering this point are lived up to. Any default of this provision must be noted on the balance sheet. Bonds redeemed through the sinking fund or otherwise bought in must be canceled and a certificate obtained from the trustees that they have been either canceled or destroyed unless the deed of trust provides that they should be kept alive.

It is also important to know with certainty what assets are pledged as security for bonds. It is not uncommon for a bond indenture to run into many pages and it is not safe to assume anything concerning the various clauses of this indenture. The writers remember at least one case in which a matter of six or eight lines in such an indenture of more than forty pages put all of the assets, including cash, receivables, and merchandise behind the bonds as security. With such a condition these bonds in analytical practice would have to be computed as current debt because they control the current assets.

MORTGAGES

These are handled the same as bonds for analysis purposes. Care must be exercised in the case of mortgages that they are registered, unless the holder is otherwise protected by law. To insure himself against possible misstatement of the actual financial condition, an auditor or credit man should make an examination of the record covering the mortgage or have some title insurance company do it for him.

Under this heading we would also classify purchase-money obligations and chattel mortgages against fixed assets, such as machinery notes. In many lines of business new machinery is purchased through purchase-money obligations, payment for which is extended over a period of years.

RESERVES

As has been previously stated, the entire subject of "reserves" will be discussed in a later section in which an attempt will be made to classify and define the kinds most commonly found on a statement. Suffice it to say at this point that reserves for depreciation usually constitute the larger part of this item, unless it has been deducted from the plant account. Reserve items such as reserve for contingencies, retirement of preferred stock, inventory losses, and the like are really segregations of surplus and as such should be counted as a part of it.

NET WORTH

The net worth of a company is the sum total of the capital stocks, both common and preferred, surplus and undivided profits. It represents the stockholders' equity in the business or what the business owes the stockholders, as it is expressed elementarily. Surplus arising from reappraisal of fixed assets should be carefully earmarked to distinguish it from earned surplus. Undivided profits are really surplus and will eventually get into the surplus account. In short, net worth represents the difference between net real assets and the obligations. It is the economic capital provided by the owners.

THE HANDLING OF GOODWILL, PATENTS, TRADE-MARKS AND TREASURY STOCK IN THE COMPUTATION OF NET WORTH

Goodwill

Goodwill is the customer's willingness to return for more purchases. It may be bought and sold and is measured by the difference between what is paid for a concern and its actual net tangible value. The justification for a goodwill item is the ability of a concern to earn profits in a substantial amount over and above ordinary interest on the capital employed and management salaries. The formula given by Robert H. Montgomery in his book, *Auditing Theory and Practice,* Vol. I, p. 197, is "Take the average net profits for a term of years, deduct interest on net tangible capital employed; deduct the value of manager's compensation; the balance represents the amount of profits which may be said to be attributable to goodwill."

In analyzing a statement the writers deduct the item of goodwill from the asset side and make a corresponding deduction from the net worth. While it is appreciated that in a great many instances the goodwill item has a substantial value, it is thought better to allow this intangible value as an added good feature rather than let it assist in bolstering up a poor condition. Too many instances have come to the writers' attention where a company has merely used the goodwill account as a stock issuing proposition and no real value exists, the company having shown substantial losses over a period of years.

Another reason for deducting goodwill is that in developing the industry studies all statements are then on the same basis, which makes comparison more accurate.

Therefore, in the computation of net worth in this text and the problems which follow, goodwill has been deducted from the assets and the net worth.

Patents

Patents differ from goodwill in that they suffer from obsolescence and depreciation. They are issued for seventeen years in this country and should be written off periodically. Like machinery, they may become obsolete and should then be written off entirely.

In a going concern patents have a value, but as a liquidating proposition they will bring little. While not as fluctuating in value nor as intangible, it has been the practice of the writers to deduct them from the net worth in order to get the true net worth.

Trade-marks

Trade-marks are like goodwill. They are the names by which people remember the goods they have purchased, and the value of these trade-marks depends on the willingness of purchasers to return and ask for the same trade-marked merchandise. It is intangible, but may be bought and sold just as any other intangible asset.

Its close similarity to other intangibles leaves no doubt as to what should be done with it in the analysis of a statement. It is deducted from the assets and net worth in order to arrive at the real net worth.

Treasury Stock

Treasury stock should include only stock which has been issued and reacquired, and not the unissued stock. This may seem like splitting hairs, inasmuch as neither the issued and reacquired nor the unissued stock is used in computing net worth. However, some concerns list unissued stock as treasury stock and it is the desire of the writers to call attention to the fact that this is incorrect. In order for stock to be treasury stock it must have been issued and reacquired generally through purchase, but sometimes through donation. When donated, best practice places it under the caption "donated stock."

The unissued stock of a company arises from an authorized capitalization in excess of present needs, thereby providing for expansion at some later date, or through inability to sell all the stock because of market conditions or lack of confidence on the part of the buying public. It may also be due to the desire for the stockholders to retain control as closely as possible and they may consider that it is not necessary to issue additional stock.

Unissued stock differs from treasury stock in that the latter must have been issued and reacquired. There is no necessity for going into the valuation of treasury stock, but it is sufficient to state that the amount of stock held in the treasury should be deducted from the capital account, so that in computing net worth the actual amount of stockholders' interest will be used. Treasury stock does not carry with it any proprietary interest or share in the business, and is not part of the net worth.

Treasury Bonds

The same reasoning applies in the case of treasury bonds as in the case of treasury stock. They are not an asset, but are merely evidences of indebtedness which does not become a debt until resold. When held in the treasury their object has been fulfilled and no obligation exists. They represent no claim against the company and for that reason should be deducted from the corresponding liability.

STATEMENT TERMS

For the benefit of those students just learning statement nomenclature and terms the following few definitions are submitted to clarify any confusion which may arise as to either the writers' use of them in this volume or any lack of knowledge they may have had, due to inexperience and unfamiliarity:

Current Assets—those assets readily liquidated in the ordinary course of business.

Quick Assets—those assets which can be quickly turned into cash.

Liquid Assets—those assets quickly turned into cash in case of liquidation.

Current Ratio—the relation of the current assets to the current liabilities.

Acid Test—the relation of the cash and receivables to current liabilities.

Working Capital—the excess of current assets over current liabilities.

Funded Debt—the total of bonds and mortgages maturing later than one year from statement date, and in no way pledging current assets.

Net Worth—the stockholders' equity in the business made up of the total capital stock, both common and preferred, together with the surplus and undivided profits. From this deduct the goodwill, patents, trademarks, etc., and treasury stock—the result is the net worth.

Total Debt—the sum of the current and funded debt.

ACCOUNT CONSOLIDATION

In order to analyze statements properly there must be some uniformity in the consolidation of figures. On earlier pages some explanation was made concerning accounting nomenclature, with the idea of giving a conservative appraisal of the accounts making up an ordinary balance sheet. No doubt numerous instances can be found of accounts not listed or explained, but because of the numerous books on the subject of the balance sheet, this, as previously stated, is merely a brief summary and an expression of opinion for conservative consolidation.

Believing the best method of presentation to be by illustration, the writers have taken a statement of a wholesale grocer, reducing its figures to a percentage of the original, but including all the accounts found on the original statement and in the order in which they appeared. They were as follows:

GERHART, COSDEN & COMPANY

Current Assets	
Cash on hand and in bank..........	$ 41,330
Checks in process of collection.......	36
Accounts receivable—customers.....	306,763
" " —shippers.......	4,874
Notes receivable—customers........	9,304
Post-dated checks.................	5,745
Railroad claims....................	239
Accounts receivable—sundry........	344
Life insurance—cash surrender value.	21,128
Bonus account—cash fund..........	7,792

GERHART, COSDEN & COMPANY—*continued*

Cash advance on merchandise	1,100	
Inventory of merchandise—finished goods	242,036	
" " " —work in process	13,214	
" " " —raw material	122,932	$ 776,837
Investments		
Real estate	485	
Buy a Home stock	46	
Farmers Securities Corp. bonds	499	
Gerhart, Cosden & Company bonds	5,550	6,580
Fixed Assets		
Real estate	87,629	
Building—halfway	568,647	
Machinery and equipment	271,384	
Warehouse equipment	11,363	
Office equipment	8,753	
Automobiles	28,474	
Printing-plant equipment	1,610	
Cafeteria equipment	2,027	979,887
Deferred Assets		
Prepaid bond expense	12,169	
" insurance	1,250	
" interest	1,230	
" group insurance	401	
Advances to salesmen	5,499	
Inventory of cans and crates	13,330	
" " fuel	2,035	
" " stores	730	36,644
		$1,799 948
Liabilities and Capital		
Current Liabilities		
Notes payable	$166,500	
Accounts payable—trade creditors	16,951	
Accounts receivable—credit balance	1,322	
Liability on undelivered contracts	397	
Accrued city and state taxes	16,593	
" bonuses	9,642	
" interest on bonds	3,392	$ 214,797

GERHART, COSDEN & COMPANY—*continued*

Bonded Indebtedness			
First Mortgage bonds 5½%, series "A"		185,000	
First Mortgage bonds 5½%, series "B"	111,000		
Less cash held by trustee for redemption	18,500	92,500	277,500
Reserves			
For depreciation		228,284	
" returnable cans		18,625	
" appraisal appreciation		247,592	
" expenses		483	494,984
Capital Stock and Surplus			
Capital stock—common—authorized		370,000	
Less unissued stock		9,250	
		360,750	
Surplus		451,917	812,667
			$1,799,948

These figures have been grouped under the following headings, which are considered essential for a proper analysis of a statement. The reader can readily understand that in order to develop ratios this consolidation must take place. Ratios are developed by dividing one group of similar items by another, thereby obtaining a proportion or relation. This consolidation has been made into the following statement, in which will be found grouped the items considered proper for the headings under which they are shown. Bonds listed among "investments," which appear to be their own bonds, have been deducted from outstanding bonds, thereby reducing the total footings by the amount of the bonds. Reserves for returnable cans and expenses have been classified as current liabilities just as reserves for dividends or taxes.

GERHART, COSDEN & COMPANY

Cash		
Cash on hand and in bank..........	$ 41,330	
Checks in process of collection......	36	
Bonus account—cash fund..........	7,792	49,158
Receivables		
Accounts receivable—customers.....	306,763	
Notes receivable— "	9,304	
Post-dated checks.................	5,745	
Accounts receivable—sundry........	344	322,156
Inventory		
Merchandise—finished goods........	242,036	
" —work in process......	13,214	
" —raw material........	122,932	
Cash advances on merchandise......	1,100	
Accounts receivable—shippers.......	4,874	384,156
Listed Securities		
Miscellaneous		
Total current.........		755,470
Fixed Assets		
Real estate.......................	87,629	
Building—halfway................	568,647	
Machinery and equipment..........	271,384	
Warehouse equipment..............	11,363	
Office equipment..................	8,753	
Automobiles......................	28,474	
Printing-plant equipment..........	1,610	
Cafeteria equipment...............	2,027	979,887
Miscellaneous Fixed Assets		
Investments		
Real estate......................	485	
Buy a Home stock.................	46	
Farmers Securities Corp. bond......	499	
Railroad claims...................	239	
Life insurance—Cash surrender value	21,128	

GERHART, COSDEN & COMPANY—*continued*

DEFERRED ASSETS		
Prepaid bond expense	12,169	
" insurance	1,250	
" interest	1,230	
" group insurance	401	
Advances to salesmen	5,499	
Inventory of cans and crates	13,330	
" " fuel	2,035	
" " stores	730	59,041
Total fixed		1,038,928
Total		$1,794,398
Treasury Bonds—Gerhart, Cosden & Company		5,550
Total per Original Statement		$1,799,948
PAYABLES		
Notes payable	166,500	
Accounts payable—trade creditors	16,951	
Accounts receivable—credit balances	1,322	
Liability on undelivered contracts	397	185,170
TAXES		
Accrued city and state taxes		16,593
MISCELLANEOUS		
Accrued bonuses	9,642	
Accrued interest on bonds	3,392	
Reserves for returnable cans	18,625	
" " expenses	483	32,142
Total current		233,905
FUNDED DEBT		
First Mortgage bonds 5½ series "A"	185,000	
" " " " " "B"	86,950	271,950
(see Treas. Bonds—Investments) Total debt		505,855
RESERVES		
For depreciation		228,284

GERHART, COSDEN & COMPANY—*continued*

NET WORTH		
Capital stock—common	360,750	
Surplus	451,917	
Appraisal appreciation	247,592	1,060,259
Total		$1,794,398

As a summary of account classification it is thought advisable to show the condensation of some of the more common accounts which it is suggested be consolidated under the several headings. The nomenclature of accounts is generally sufficiently definite so that they can be placed in one of the following groupings. This suggested process of consolidation is merely to develop ease and simplicity in handling data and in no way to excuse a close scrutiny of the soundness of any separate item. Examination for separate goodness or liability should be done by minute division, but, soundness being established, analysis can be accomplished more readily on a grouping of similar items achieving a simplified statement.

ASSETS

CASH

On hand
In bank

RECEIVABLES

Accounts—customers
Notes— "
Trade acceptances—customers
Sundry—for merchandise sold

INVENTORY

Finished goods
Goods in process
Raw material
Goods out on consignment
Goods in transit
Goods under definite commitment

LISTED SECURITIES

U. S. Government bonds
Readily marketable securities

MISCELLANEOUS

Call loans

Total Current

FIXED ASSETS

Plant or Fabricating

Real estate
Plant and equipment
Furniture and fixtures
Automobiles

Miscellaneous

Stocks and bonds of subsidiaries
Notes and accounts receivable from officers and directors
" " " " " employees
" " " " " subsidiaries
Sinking fund
Cash surrender value of life insurance
Prepaid expenses
Deferred charges
Railroad claims
Advance to salesmen

Total Fixed

INTANGIBLE ASSETS

Goodwill—deducted from total of statement and net worth
Patents and trade-marks deducted from total of statement and net worth
Treasury bonds deducted from total of statement and funded debt
Treasury stock deducted from total of statement and net worth
Bond discounts deducted from total of statement and net worth
Promotion expense, can occasionally be deducted serially from undivided profits but in liquidation is of no value.

Total

LIABILITIES

PAYABLES

Notes payable
Accounts payable

Trade acceptances payable
Liability under letters of credit
Overdrafts
Accounts receivable credit balances
Special deposits

TAXES

Income taxes and reserve for federal taxes
City and state taxes

MISCELLANEOUS

Accrued items
Dividends declared

Total Current

FUNDED DEBT

Bonds
Mortgages

Total Debt

RESERVES

Depreciation
Bad debts
Inventory shrinkage
Contingencies
Retirement of preferred stock
Reserve for sinking fund

NET WORTH

Preferred stock
Common stock
Surplus
Undivided profits

Total

Notes and accounts receivable discounted or hypothecated are sometimes deducted and do not appear among the receivables. More conservatively, they should remain among receivables and funds received from their hypothecation entered among payables. If this is not done the contingent debt item should indicate the amount, so that the analyst may reconstruct the statement in the light of this knowledge if he so wishes.

PREPARATION OF BALANCE SHEET STATEMENTS.

[FORM OF BALANCE SHEET.]

ASSETS.

Cash:

- 1a. Cash on hand—currency and coin
- 1b. Cash in bank

Notes and accounts receivable:

- 3. Notes receivable of customers on hand (not past due)
- 5. Notes receivable discounted or sold with indorsement or guaranty
- 7. Accounts receivable, customers (not past due)
- 9. Notes receivable, customers, past due (cash value, $)
- 11. Accounts receivable, customers, past due (cash value, $....)

Less:

- 13. Provisions for bad debts
- 15. Provisions for discounts, freights, allowances, etc.

Inventories:

- 17. Raw material on hand
- 19. Goods in process
- 21. Uncompleted contracts
  Less payments on account thereof
- 23. Finished goods on hand

Other quick assets (describe fully):

Total quick assets (excluding all investments)

Securities:

- 25. Securities readily marketable and salable without impairing the business
- 27. Notes given by officers, stockholders, or employees
- 29. Accounts due from officers, stockholders, or employees

Total current assets

Fixed assets:

- 31. Land used for plant
- 33. Buildings used for plant
- 35. Machinery
- 37. Tools and plant equipment
- 39. Patterns and drawings
- 41. Office furniture and fixtures
- 43. Other fixed assets, if any (describe fully).

Less:

- 45. Reserves for depreciation

Total fixed assets

Deferred charges:

- 47. Prepaid expenses, interest, insurance, taxes, etc.

Other assets (49)

Total assets

LIABILITIES.

Bills, notes, and accounts payable:

Unsecured bills and notes—

- 2. Acceptances made for merchandise or raw material purchased
- 4. Notes given for merchandise or raw material purchased
- 6. Notes given to banks for money borrowed
- 8. Notes sold through brokers
- 10. Notes given for machinery, additions to plant, etc.
- 12. Notes due to stockholders, officers, or employees

Unsecured accounts—

- 14. Accounts payable for purchase (not yet due)
- 16. Accounts payable for purchases (past due)
- 18. Accounts payable to stockholders, officers, or employees

Secured liabilities—

- 20a. Notes receivable discounted or sold with indorsement or guaranty (contra)
- 20b. Customers' accounts discounted or assigned (contra)
- 20c. Obligations secured by liens on inventories
- 20d. Obligations secured by securities deposited as collateral
- 22. Accrued liabilities (interest, taxes, wages, etc)

Other current liabilities (describe fully):

Total current liabilities

Fixed liabilities:

- 24. Mortgage on plant (due date ....)
- 26. Mortgage on other real estate (due date ....)
- 28. Chattel mortgage on machinery or equipment (due date ....)
- 30. Bonded debt (due date ....)
- 32. Other fixed liabilities (describe fully):

Total liabilities

Net worth:

- 34. If a corporation—
  - (a) Preferred stock (less stock in treasury)
  - (b) Common stock (less stock in treasury)
  - (c) Surplus and undivided profits

  Less—
  - (d) Book value of good will
  - (e) Deficit
- 36. If an individual or partnership—
  - (a) Capital
  - (b) Undistributed profits or deficit

Total

NAME ____________________

BUSINESS ____________________

ADDRESS—OFFICE ____________________ PLANT ____________________

BRANCHES ____________________

TO

For the purpose of procuring credit from time to time with you, for our negotiable paper or otherwise, we furnish the following as a true and correct statement of our financial condition on ________ 19__, and hereby agree to notify you immediately, in writing, of any materially unfavorable change in our financial condition. In the absence of such notice or of a new and full written statement, this is to be considered as a continuing statement, and that our pecuniary responsibility has not fallen below the condition herein set forth.

ASSETS	Dollars	Cts.
Cash on Hand		
" this Bank		
" in other Banks		
Accts. Receivable, from Customers, not pledged		
Notes Receivable, from Customers, not pledged		
Acceptances of Customers, not pledged		
Merchandise, Finished		
" in Process, Unfinished		
" Raw Material, Processed		
" Raw Material, Unprocessed		
" Commitments, not in inventory		
U. S. Securities		
Listed Stocks and other Bonds		
TOTAL UNPLEDGED CURRENT ASSETS		
Accts. Receivable from Customers, Hypothecated		
Notes " " " "		
Acceptances of Customers		
Merchandise, Pledged or Hypothecated		
Securities " " "		
TOTAL CURRENT ASSETS		
Notes Receivable from Officers, Directors, Stockholders or Employees		
Accounts Receivable from Officers, Directors, Stockholders or Employees		
Due from Controlled or Allied concerns for Merchandise		
Due from Controlled or Allied Concerns for Cash Advancement		
Otherwise due from Controlled or Allied Concerns		
Stocks and Bonds, Allied Companies		
" " " Other than Allied Companies, Not Listed		
Land		
Buildings		
Machinery, Fixtures and Equipment		
Prepaid Items, Ins., Rent, etc.		
Good Will, Patents, Trade Marks, etc.		
TOTAL		

LIABILITIES	Dollars	Cts.
Notes Payable for Merchandise		
" " to Banks of Deposit		
Notes Directly Payable to other Banks		
" Payable Sold Through Brokers		
" " to Officers, etc.		
" " Otherwise Issued		
Accounts Payable for Merchandise not Due		
" " " " Past Due		
Trade Acceptances Given		
Accounts Payable to Officers		
Money Deposited with this Company Dwing. Int.		
" " " " " " Otherwise		
Tax Payment Reserve		
Bonds or Mtges. Maturing within 12 months		
Liability on Merchandise Commitments		
Accruals—Interest, Rent Dividends, etc.		
DIRECT CURRENT DEBT		
Accts. Receivable Pledged or Hypothecated		
Notes " " " "		
Acceptances Pledged		
Notes or Accounts secured by Merchandise		
TOTAL CURRENT DEBT		
Bonds Maturing beyond 12 months maturity		
Mtges. " " 12 " "		
Chattel Mortgages		
TOTAL DEBT		
Reserve for Depreciation		
" "		
" " "		
" " "		
Capital, Preferred		
Capital, Common		
Stock, No Par Value		
Undivided Profits		
NET WORTH		
TOTAL		

Unless otherwise specifically noted all Merchandise has been figured at cost or market, whichever is lower.

CHAPTER IV

The Profit-and-Loss Statement, the Budget and Reserves

THE PROFIT-AND-LOSS STATEMENT

While the practice of giving banks a balance sheet is now fairly prevalent, the operating figures as disclosed by the profit-and-loss statement are too often withheld. The profit-and-loss statement, together with the reconcilement of the surplus account, is closely connected with the balance sheet and should be given to the banker. It is not necessary to go into minute detail when submitting such a statement to the banker, but the essential facts which will be covered in this chapter should be clearly shown.

SALES

Many companies will not disclose their sales figure because they are afraid it will fall into the hands of a competitor who may be able to use it to their detriment. Such information given to a concern's bank need not go any further than the officer of the bank, but he is entitled to this confidence as a part of the knowledge required to estimate accurately the goodness of a credit risk.

It is through the sales figure that the banker judges the freshness of the inventory, the collectibility of the receivables, the productivity of the plant, and the turnover of the net worth. These may be termed velocity ratios and will be discussed in greater detail in a later chapter. It is sufficient to say here that the item of sales is extremely important. In fact, the argument that a knowledge by a competitor of the sales figure may give him an understanding of the business emphasizes the importance of sales and the reason why they should be given to banks with lines of credit. They are absolutely necessary to an understanding of the situation.

In the studies of the various industries made by the Robert Morris Associates, about 65 per cent of the statements include the sales figure. This is an increase in the last few years and it is hoped that through the writings of numerous authorities on this subject greater publicity will be given to this phase of financial affairs of business.

Many concerns will give a figure for the net profit of the year's operation, but will not divulge the sales item. The logic of this is not clear. After all, it is the profits that a rival company is most interested in, and if one company is making greater profits than its rival, it would seem that this would cause more concern than a knowledge of the sales. The company having greater profits may not have such a high volume of sales, but through better buying, manufacturing, and marketing or economies in production may have been able to increase profits. The knowledge of this fact would seem to be more vital than knowledge of a rival's sales figure. In the case cited, a knowledge that one's own company had greater sales than a rival might do more harm than good, as they might be disposed to let up or grow lax in their efforts to find economies hoping that the sales will make up for them.

It is best to show the amount of returns and allowances as a deduction from the sales figure rather than give the sales figure net of returns and allowances. This gives anyone analyzing the statement an opportunity to determine whether or not the amount is too large, and if so to inquire as to the reason.

COST OF GOODS SOLD

This is obtained by adding the opening inventory to the purchases and deducting the closing inventory. This, of course, is for a purely trading concern. An account called the cost of production, which includes prime costs or material and labor, is used instead of purchases in a manufacturing concern. The items making up the cost of sales should be shown in order that a satisfactory check can be made on the inventories, and that one can be more certain that accounts which really fall under some other heading are not included to make up the cost of goods sold.

The cost of goods sold deducted from the net sales gives what is generally called the gross profit on sales.

EXPENSES

In a condensed profit-and-loss statement the manufacturing, selling, administrative, and general expense are lumped in one item. This is not satisfactory, as it does not give any indication of the extent of the expenditures under the four major headings. These are of considerable importance to bankers, especially such items as advertising and salaries.

Another way of condensing the profit-and-loss account is to show the various main headings of expense with their amounts. While this is better than the above, it still does not give the detail necessary for a good analysis.

By far the best way is to use the main heading and list the various expenses which come under that heading to correspond to the accounts in the ledger. This should be done for each of the main headings. It enables the reader to judge whether or not the amounts of the various items are justified. Unusually large items are easily detected, and upon inquiry it may be ascertained whether or not they are justified.

The deduction of these expenses, manufacturing, selling, administrative, and general, from the gross profit on sales gives the net profit on sales.

GROSS INCOME

This item is obtained by adding the other income items such as income from investments in outside sources, interest, rent, and numerous other sources of income. From this figure of gross income deduct the interest on notes and bonds payable and the resulting figure is the net profit. In the event that there are any special credits or charges against the profit-and-loss operations for the year, they should be applied against the net-profit figure which gives the final profit-and-loss figure for the period which is added to the surplus at the beginning of the period. Dividends are usually deducted from the resulting figure and the balance carried to the property statement as the surplus figure.

This in brief is the profit-and-loss account as given by the Federal Reserve Board in their pamphlet "Approved Methods for the Preparation of Balance Sheet Statements," a copy of which follows:

[FORM FOR PROFIT AND LOSS ACCOUNT]

Comparative statement of profit and loss for three years ending....................19 .

	Year ending—		
	19—	19—	19—
Gross sales..	$........	$........	$ ....
Less outward freight, allowances, and returns...........	....	....	....
Net sales..................................	....	....	....
Inventory beginning of year........................	....	....	....
Purchases, net..	....	....	....
	....	....	....
Less inventory end of year............................	....	....	....
Cost of sales................................	....	....	....
Gross profit on sales..........................	....	....	....
Selling expenses (itemized to correspond with ledger accounts kept)..............................	....	....	....
Total selling expense..........................	....	....	....
General expense (itemized to correspond with ledger accounts kept)..............................	....	....	....
Total general expense..........................	....	....	....
Administrative expenses (itemized to correspond with ledger accounts kept)........................	....	....	....
Total administrative expense..................	....	....	....
Total expenses................................	....	....	....
Net profit on sales............................	....	....	....
Other income:			
Income from investments..........................	....	....	....
Interest on notes receivable, etc.	....	....	....
Gross income................................	....	....	....
Deductions from income:			
Interest on bonded debt............................	....	....	....
Interest on notes payable..........................	....	....	....
Taxes..	....	....	....
Total deductions..............................	....	....	....
Net income—profit and loss........................	....	....	....
Add special credits to profit and loss................	....	....	....
Deduct special charges to profit and loss.............	....	....	....
Profit and loss for period......................	....	....	....
Surplus beginning of period..........................	....	....	....
	....	....	....
Dividends paid...	....	....	....
	....	....	....
Surplus ending of period........................	....	....	....
	....	....	....

A condensed form in rather common usage on borrowers' statements is also submitted.

CONDENSED PROFIT-AND-LOSS STATEMENT FOR YEAR ENDED..................

Expense	Dollars Cts.	Income	Dollars Cts.
Cost of material or merchandise consumed.	$ 650,000	Net sales...........	$1,200,000
Actual expense of conducting business, including rent, taxes, insurance, etc.	405,000	Received from investments............	9,000
Salaries paid to officers		Received from discounts on purchases	....
Interest on borrowed money, bonds, etc. .	40,000	Received from other sources...........	....
Bad debts charged off.		....	
Depreciation........	45,000	....	
Net profits..........	69,000	....	
Total.........	$1,209,000	Total........	$1,209,000

For those desiring the condensed form which shows deductions, the following exhibit will give the essential information.

CONDENSED PROFIT-AND-LOSS STATEMENT FOR YEAR ENDED................

Sales..		$1,200,000
Less returns and allowances....................		50,000
Net sales....................................		$1,150,000
Less cost of goods sold.........................		600,000
Gross profit..............................		550,000
Less:		
Manufacturing expenses...............	$300,000	
Selling expenses......................	15,000	
Administrative expenses..............	90,000	405,000
Net profit from operation..........		145,000
Add:		
Other income.................................		9,000
Net income.............................		154,000

Deduct: Other expenses		
Depreciation	45,000	
Dividends	40,000	85,000
Net Profit to Surplus		$ 69,000

RECONCILEMENT OF SURPLUS

A frequent annoyance to a banker is an inability to reconcile the surplus account. Given the surplus of the last year and the profits or losses, he should be able to compute the present surplus easily. It often happens, however, that a company has added to or deducted from the surplus or profit-and-loss account so that the two surplus accounts do not reconcile. Often the complete reconcilement discloses questionable practices of accounting.

The reconcilement should show the following information:

Surplus beginning of period		$ 150,000
Additions for the period	$20,000	
Deductions for the period	6,000	14,000
		$ 164,000
Add: Profit for the period		37,000
		$ 201,000
Less dividends		25,000
Surplus to balance sheet		$ 176,000

This schedule gives all the information necessary to determine how the surplus figure was developed and to what source the increase or decrease over the past year may be traced. The following is another exhibit recommended for use.

Reconcilement of Surplus

Undivided surplus at close of previous year $..........		
Less change not applicable to current year $________	$........	
Add net profits as above...........................	$________	
Less dividends (preferred...%)..........$..........	$........	
" " (common...%)..........$________	$________	
Present undivided surplus.........................	$........	

THE BUDGET

While the budget is not so important as the balance sheet in the minds of most bankers, it is making considerable progress, and the day is not far distant when the banker will be as insistent on a borrower having a well-drawn-up budget as he is that the borrower show a satisfactory balance sheet. The balance sheet shows what the present condition of the company is, and through examination with previous statements one can ascertain whether or not the company has made any progress, while the budget is a program for the future.

A good banker looks toward the future, which accounts for his interest in the budget. There are probably still a few who are more interested in the today, but it is only those with a vision for the future who make successes in the banking profession. So that it is only natural that when a borrower shows his banker a well-planned and carefully-thought-out budget he is welcomed by the banker as a progressive business man.

The dictionary does not define the word "budget" to cover the use made of it in this chapter. It is from the French word *bougette* and is defined as a leather bag or wallet with its contents. It is also properly used when applied to a financial program presented to a government covering estimated expenditures for the ensuing year. The use made of the word in this chapter is more modern and covers its more common usage today. The business budget is a coordinated plan which points all factors of manufacture, selling, and distribution to a definite objective and is tied in with the general accounting.

ADVANTAGES OF THE BUDGET

The advantages of a budget are well enumerated by Arthur Lazarus, chief of the cost accounting bureau of the Fabricated Production Department, Chamber of Commerce of the United States, in a pamphlet "Budgeting for Business Control," published in 1922.

1. Everyone in the establishment will have a definite goal for attainment.
2. Sales and production plans can be coordinated with financial resources.
3. More continuous operation and greater regularity of employment can be provided.
4. Products, processes, and equipment can be standardized.
5. Costs can be used for purposes of control rather than as historical information.
6. Reduction of waste will be encouraged by the maintenance of better balanced inventories, by instituting wage payments based upon results, by definitely assigning responsibility for expenditures.
7. Taken in conjunction with the business cycle, the budget will give warning when to be cautious and the cue to go forward with manufacturing plans.
8. At all times the budget serves as a measuring stick to compare actual performances with promises and standards, showing not only what may be done, but what should be done.

CONSTRUCTION OF THE BUDGET

A concern which has developed the budget to the fullest extent will have a master budget, which in turn will be subdivided into several budgets such as the sales, production including purchase, expense, and the financial budget. In the event that building or improvements are contemplated a budget should be drawn up to take care of this.

BUDGETING THE SALES

The sales budget is drawn up by the sales manager from his knowledge of the field for his merchandise gained from past experiences, general economic, and political conditions, and a reasonable estimate of the possible new fields for his products, natural increase in population, or possible buyers. The advertising done by the company should come under the control of the sales department and any concentrated advertising should enter into consideration in making up the sales budget. The estimated sales by months should be compared with the actual sales and any adjustments made for variations. Needless to say there should be the closest cooperation between the sales and production or purchasing departments, as the sales budget depends absolutely on the other for successful working. Production or purchasing is used, as the former covers a manufacturing concern and the latter a purely trading concern.

The sales budget is the most important of all the budgets. It is the target for the other budgets to shoot at, but it in turn is dependent for its best results upon the ability of the production or purchasing department which must keep a sufficient stock of material available for shipment when needed.

PRODUCTION OR PURCHASE BUDGET

In a manufacturing concern the purchase budget is part of the production budget. The production department must maintain a sufficient quantity of goods on hand to satisfy the requirements of the sales budget and equally as important, when needed by the sales department. This knowledge requires a very thorough inventory record. The estimate of the possible safe inventory to have on hand at the end of the period and the estimated sales called for by the sales budget will give the production department a fairly close estimate of the amount of goods that must be produced. The purchasing of raw material depends on the production schedule, and as the required amount of raw material necessary for the finished product, together with opening and estimated closing inventory, is known, the purchase requirements are easily met.

The production department is faced with several problems that may affect its output, such as maintenance of a steady, satisfied labor supply in order to get the greatest efficiency, keeping equipment in use to fullest extent possible, and economizing wherever possible in the use of labor or machinery.

Under the production schedule, we of course find the direct labor and materials cost making up what is generally termed the "cost of goods sold," direct labor being as much a primary cost as the material itself. The remaining costs in making the finished product come under the expense budget.

BUDGETING THE EXPENSE

The expense budget covers the indirect manufacturing expenses and labor, selling and administrative expenses. It will depend somewhat on the type of business and the extent of budgeting desired whether or not these three main headings are again subdivided. Except in very large concerns it is not considered necessary. *Budget Control—What Is It and How to do It,* published in 1925 by Ernst & Ernst, elaborates on the expense budget, and makes numerous subdivisions which brings the budget to a very high state of development.

BUDGETING FOR PLANT ADDITIONS

Any additions or replacements and the means of paying for them should be carefully planned. The banker is interested in these, because it is a case of transferring liquid into fixed assets, and often this is not necessary, since through greater efficiency and more constant use of the available equipment it may be possible to meet the need for greater production.

Any increase in plant should, of course, bring added revenue, and if the addition does not bring as high a return as the plant previously had the addition was not warranted. Careful attention should be paid to the increased expenses of maintenance, taxes, interest depreciation, and other profit-eating items, in building up this budget.

THE FINANCIAL BUDGET

It is this section of the general budgeting program in which the banker is primarily interested. This shows the cash balance at the beginning of the period, together with the budgeted receipts and expenditures and an estimated cash balance at the end of the period. The schedule should show the borrowing needs of the company and when they occur, together with the liquidating period when they hope to be out of debt as far as possible. Such a program would be welcome to a banker, as it would show him his client's borrowing needs, when to expect them and he would be assured that the loans would be paid off so that the customer would be out of debt during some definite period.

The financial budget brings in the net results of the sales, production or purchase budget, and the expense budget, together with the new building or extension budget if such a one is contemplated.

RESERVES

The dictionary defines a "reserve" as "something kept back, withheld, or set aside." It is the amount of profits set aside or withheld from surplus to meet a future obligation, a possible contingency, a retirement of capital or bonds, or to take care of a reduction in asset accounts. These may be grouped in more definite classifications as suggested in *The Balance Sheet* by Charles B. Couchman, as follows:

1. Reserves applying to assets.
2. Reserves that are true liabilities.

3. Reserves that are part of the accounting capital and are appropriations of surplus.

This item of reserves is probably the most frequently misused of any on the balance sheet. It is often shown as one figure, and when analyzed it is discovered to contain all three of the above classifications. Obviously such practice is wrong and should be discouraged. A "reserve for taxes and contingencies," for example, is indefinite. In such a case the bank's customer will not receive the benefit of the doubt, but the entire amount will be placed among the current liabilities. It is necessary for the credit man to take this rather arbitrary stand if no explanation is forthcoming.

Another grouping of reserves is found most frequently on the statements of finance companies. These represent generally amounts of interest paid for which the company is liable in services.

These several types of reserves will now be taken up separately and a number of the different captions most frequently found will be discussed.

RESERVES APPLYING TO ASSETS

Reserves for Bad Debts

The amount set aside to take care of losses due to bad accounts will vary in different lines of business. Suffice it to say that they do occur in all lines of business which are on a strictly cash basis. Each company must determine for itself what is a fair amount to be set aside out of earnings to take care of these bad and doubtful accounts. At best the amount annually set aside is little better than an estimate.

The usual procedure is for a firm to determine from its own experiences what percentage of the total year's business it usually collects. If such experience shows that it collects all but 1 or 2 per cent of its annual sales, this amount is set aside out of operating income and is part of the expense of carrying on the business. Thus the possible loss is charged against the year in which it was incurred, rather than borne by the following year. It is not likely that the estimate for this loss will be correct, so adjustments will have to be made out of the following year's profits if the estimate was too low, or may be added to the surplus account if too high.

Reserve For Depreciation

This reserve differs somewhat from the "reserve for bad or doubtful accounts." This reserve is cumulative during the life of the asset, while the bad debt reserve is merely set up to take care of the yearly shrinkage in accounts receivable. Both are, of course, estimates, as it is just as difficult to determine the life of a machine or building as it is the collectability of accounts. A great deal has been written on this subject of "depreciation" and the reserve to take care of it. Any number of authorities give rates for depreciation, and it is suggested that anyone interested in these rates will obtain a very good summary from R. H. Montgomery's book *Auditing, Theory and Practice,* Vol. I, pp. 639-643. It is not in the province of this book to go into the subject in such great detail. Another good authority on the subject is *Principles of Depreciation,* by Saliers (Ronald Press, 1918).

Depreciation in Analysis

There are several ways of handling depreciation reserves when analyzing a statement, as shown by analyses made by bank credit executives. The following article will give the reader the two principal ways of handling reserves in analysis and the arguments for and against each method.[1]

[1] This is quoted from the *Bulletin* of the Robert Morris Associates for September, 1925.

Three ways are open to the analyst in handling reserves and computation of the ratios.

1. Fixed assets gross and depreciation reserves added to net worth.
2. Fixed assets gross and depreciation reserves disregarded.
3. Fixed assets net of depreciation reserves.

Reserves are amounts set aside out of earnings, and in case of plant assets are credits reflecting the decrease in value due to depreciation and obsolescence. They are bookkeeping entries setting aside each year an amount which is the best estimate an organization can make on the probable decrease in value of its plant assets and is influenced to some extent by the depreciation schedules in the income-tax regulations. The actual amount necessary, of course, cannot be determined until the asset has either been junked or otherwise eliminated. The reserve is charged against the operations for each fiscal year and thereby prevents increase of the surplus to that extent.

Let us take up the three methods in the order named:

I. Add the reserve to the net worth in computing the ratios involving these accounts.

This method is used by some credit departments which consider reserves as a segregation of surplus and believe, when computing ratios involving these accounts, that they should be added to surplus to get the actual figure. This method has the following effect on ratios:

1. Increases the worth-fixed ratio.
2. Increases worth-debt ratio.
3. Decreases sales-worth ratio.

The writers do not consider this to be the proper method because the handling of reserves should affect only the ratios involving fixed assets, while this method affects net-worth ratios principally. The reserve is directly applicable to the asset against which it is set up, and has definitely been segregated from surplus in order to show a truer picture of the fixed assets. As the machinery and plant depreciate from year to year, these periodical credits to reserve are set up which, while not positively accurate, are as accurate as accounting science can develop. For this reason the asset should not remain gross and the reserve be added to the net worth, as the object is not to determine the correct net worth, which is the capital and surplus, but rather to give the best comparable figure for the fixed assets. If one adds the reserve and net worth, why segregate them? This method is the least used by credit men, but has the one advantage over the second method to be discussed, that it does take the reserve into consideration, while the second does not.

II. The second method, using the gross amount of the fixed assets and only the capital and surplus as net worth, is advocated by some analysts. This method has the following effect on ratios:

1. Decreases the worth-fixed ratio.
2. Decreases the sales-fixed ratio.

This method ignores a very large item on the balance sheet and as the fixed assets are shown in their largest amount or gross, the above-mentioned ratios are lower than when otherwise computed. It is thought by some that, inasmuch as this method places the company under the most severe test for analysis, it is the best of the three, because if a company can pass this test it is far more certain to have its assets in liquid form. Advocates of this method say that a reserve is only a bookkeeping item, and when the company needs additional funds with which to purchase new plant assets they usually find it necessary to borrow. The mere setting up of a reserve does not provide funds with which to purchase additional plant. This criticism is partly true and perhaps extreme conservatism requires the setting aside of a sinking fund to take care of future plant expenditures. However, while it is true that the analyst cannot definitely lay his finger on the offsetting debit to the reserve account, cannot show in what manner the reserve is invested, he knows that the money has remained in the business and has not been expended in dividends, salaries, or bonuses.

When the ratios involving the fixed assets are computed gross the real picture of the change over a period of years is not clearly shown. Take, for example, fixed assets that are to be depreciated over a ten-year period or 10 per cent a year, as a simple illustration. Assume there are no additions to plant, but only normal expenses for repairs and maintenance incident to general upkeep of the plant. If fixed assets are shown in their gross amount in computing ratios, the ratio will only increase or decrease as the other item in the ratio computation increases or decreases. To illustrate—fixed assets in the beginning of $100,000 when computed gross over a period of years with no additions, to make the case clearer, will be the divisor in the worth-fixed ratio at the end of the ninth year. The ratio can only increase by an increase in worth, or in the sales-fixed ratio by an increase in sales. The analyst expects normally to find an increase in these items, but a company which has taken out a reasonable amount in depreciation is put at a disadvantage when compared with a company which adds such depreciation to the net worth. Also, to continue the illustration, it is presumed that the above company has a net worth at the beginning of the ten years of $125,000 and at the end of nine years $200,000. If the ratios of worth to fixed assets are computed, they are as follows:

$$\text{First year} \quad \frac{\text{Worth}}{\text{Fixed}} \quad \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year} \quad \frac{\text{Worth}}{\text{Fixed}} \quad \frac{200{,}000}{100{,}000} = 200\%$$

This method of computation ignores the reserve and shows the fixed assets in the gross amount. The reserve is then the one item which does not enter into computation of the ratios. The tenth year when the machinery is junked and the reserve is wiped out, the ratio becomes infinity, which does not seem to show the trend of the fixed-asset investment accurately.

So far no allowance for replacements or renewals has been made. If the company makes renewals equal to the depreciation each year, the following illustration results, using the above figures for the worth-fixed ratio.

$$\text{First year } \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year } \frac{200{,}000}{190{,}000} = 105\%$$

Again ignoring the reserve in the computation of ratios, there is a radical change at the end of the ten years when the machinery is junked. From a ratio of 105 per cent in the ninth year the ratio jumps to more than 200 per cent in the tenth year, depending on the net-worth increase. An average increase in net worth of $7,500 would give a ratio for the tenth year of $\frac{207{,}500}{100{,}000} = 207.5$. This again does not appear to show accurately the trend of the plant investment.

When the reserve is not segregated from net worth the following ratios result:

$$\text{First year } \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year } \frac{290{,}000}{100{,}000} = 290\%$$

$$\text{Tenth year } \frac{207{,}500}{100{,}000} = 207.5\%$$

Therefore a ratio of 207.5% results if the company purchases machinery equal to the reserve of $100,000 at the end of ten years, and infinity if they do not renew their plant. If they add to the plant an amount equal to the depreciation each year, the ratios are as follows:

$$\text{First year } \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year } \frac{290{,}000}{190{,}000} = 152\%$$

$$\text{Tenth year } \frac{207{,}500}{100{,}000} = 207.5\%$$

This again is not an accurate portrayal of the trend in fixed investment.

III. The third method deducts the reserve for depreciation from the fixed asset investment in the computation of the ratios. It has long been an approved, if not the most improved, method of balance-sheet set-up to show the gross amount of the fixed assets less depreciation and the net amount of the assets carried into the total column. Most of the larger companies in the packing and rubber business use this method, as well as many companies in other industries.

This method recognizes the reserve item as a deduction from the asset account to take care of its reduction in value over a period of years. To use again the simple illustration previously mentioned, \$100,000 invested in fixed assets to be depreciated over ten years, with \$125,000 in net worth at the beginning and \$200,000 at the end of nine years, the worth-fixed ratio runs as follows:

$$\text{First year } \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year } \frac{200{,}000}{10{,}000} = 2{,}000\%$$

This shows a gradual reduction of the fixed assets by \$10,000 each year. At the end of ten years, when either the fixed assets are replaced or the company leases its means of fabrication, the ratio jumps to infinity.

Assuming again that the plant is kept up by renewals and replacements to the amount of the depreciation, the worth-fixed ratios are as follows:

$$\text{First year} \quad \frac{125{,}000}{100{,}000} = 125\%$$

$$\text{Ninth year} \quad \frac{200{,}000}{100{,}000} = 200\%$$

The tenth year the ratio would still have \$100,000 as a divisor. If there is an average increase in net worth of \$7,500 the ratio in the tenth year would be

$$\frac{207{,}500}{100{,}000} = 207.5\%$$

Certainly the company is in a better position at the end of the ninth year than in the first year. This betterment is not accurately reflected if this ratio is computed on the basis of gross fixed assets. If fixed assets are not renewed, which is of course an extreme illustration, as no company is likely to let its plant run down to nothing, there is an increase in the ratio from 125 per cent to 200 per cent. If fixed assets are computed net, the ratio increases from 125 per cent to 200~~0~~ per cent. By replacement the ratio computed on the basis of gross fixed assets declines from 125 per cent to 105 per cent over nine years, and then rises to over 200 per cent, while if computed net the ratio increases from 125 per cent to 200 per cent at the end of the ninth year and to 207½ per cent at the end of the tenth year. This, in the writer's opinion, reflects far more accurately the trend of the fixed asset investment and is therefore the best of the three methods used.

A good argument in favor of showing fixed assets net of depreciation in this connection is that by so doing all statements are more readily comparable. It is impossible to estimate the reserve and place it on the liability side of statements showing fixed assets net, so the only way statements can be brought to a uniform basis is by deducting the reserves from the fixed assets of those statements showing the reserves on the liability side.

In the accumulation of figures for industry studies it is preferable to have all statements on the same basis. Uniformity in analytical methods can only come about through a greater uniformity among bank credit men in the setting up of their statements. Statement uniformity is a goal to shoot for. The statements sent to the office of the Robert Morris Associates for accumulation in industry studies clearly show this lack of uniformity not only in the more technical points, such as reserves, but in what would seem to be quite obvious classifications, such as cash. In some instances statements of the same company, on the same date, show a difference in the cash item, indicating the use of widely varying methods of classification. It is to be hoped that a better understanding of the value of uniformity and more definite use of nomenclature, both in detail and in condensed form, will develop so that basic statistics can be built up on figures having closer standardization both of fact and in manipulation.

Another view of the depreciation reserve question is set forth here which covers the question from a more conservative bank-credit point of view.

ANOTHER TREATMENT OF RESERVES IN ANALYSIS [1]

When machinery is purchased to be used in any business it is purchased with the well-established fact in mind that it will wear out through use or become so obsolete that it can no longer compete with more modern machinery and will have to be replaced. The thoughtful business manager takes this into consideration when fixing his costs of production. He totals the cost of materials, labor, selling expenses, etc., and adds to these costs a certain percentage to cover wear and tear and danger of obsolescence. When

[1] This is quoted from the *Bulletin* of the Robert Morris Associates for October, 1926.

a customer buys an article or the output of goods or power, it is proper for him to pay all costs of production, which include these depreciation costs. Prices having been established with material, labor costs, etc., in mind, gross profits are increased by the allowance made for depreciation. In order that these seeming profits should not be confused with real profits, it is good practice to segregate the amount computed as depreciation expense from the undivided profits, carrying it in a special "reserve for depreciation" account. Such practice leaves the undivided profits a true picture of the actual net earnings that are truly available for distribution to stockholders either as dividends or as capital disbursement in liquidation.

The cumulative amount of the reserve in any operation appears in one of three ways on the property statement. It may be deducted from its related fixed assets, and this asset be listed net. The cost of the fixed asset may be listed in an indented column under which the total depreciation may appear to be subtracted, the remainder or net amount being carried into the asset column. The cost of the fixed assets may appear as an item or as items among the assets, and an amount representing the reserves against the same may appear on the liability side below the total liabilities and above the capital or net worth item.

The first method, while rather common practice, is absolutely incorrect in principle. When the fixed assets are reported simply as "net of reserves," the analyst has no data from which to determine whether or not the reserves are adequate. The reserves, in total, should increase each year in an amount equivalent to the proper percentage of the cost value of the assets which will cancel the items at the end of their average life, unless replacement to exceed the annual appropriation is made.

Depreciation by wear and tear occurs through physical use of machinery. This goes on quite irrespective of final profits from operation, being an inseparable part of production. If an operation has not been profitable in any one or several years it is possible for the management to conceal a substantial part of the loss by neglecting the depreciation charge and letting the amount ride into undivided profits. If this occurs in a company which reports its fixed assets "net of reserves," such action, bolstering up apparent profits, could be discovered only by accident.

The second method of recording, that of showing the cost of fixed assets and the depreciation against them, but carrying only the net amount out to be footed into the assets, is a much more correct and accurate manner of handling the problem. When considered only from the standpoint of values and liquidation, it is a safe and sound method. The depreciation amount represents the computed loss of value of certain assets. If this has been figured exactly in conformity with the real loss in value, the net amount of the fixed assets less the depreciation reserve will represent real values.

There is, however, an analytical danger in setting up figures in this manner. A going business requires investment in fixed assets of one kind or another. This is a capital investment and, with rare exceptions, all replacements of machinery, fixtures, and buildings are capital in their nature. The exceptions are when the depreciation account represents cash on hand or outside investments which can be sold without affecting the business. In this case the depreciation account represents spendable funds that can be used to replace the worn-out or obsolescent machinery. This is not the usual way of handling the account, and depreciation reserves generally represent nothing but lost values and have no spendable replacement characteristics.

The segregation from the undivided profits of a reserve account is very often a preventive accounting measure to deter the spending of earnings, or apparent earnings, in dividends, and to keep the funds in the business. In keeping them in the business in this manner they become distributed throughout the assets or reflected in a lowering of the debts, but they are not current funds which can be spent.

As we advance from year to year along the normal expected life of a machine, the depreciation account increases, so that at the replacement period it equals the investment cost. As a net item the machine disappears from the statement. If everything works according to schedule the machine is junked without affecting the net worth of the company and apparently the depreciation reserve has fulfilled its obligation.

But with what does the company buy a new machine to take the physical place of the old one and carry on the operations of manufacture? Washing out the old asset is not enough. The physical machine must be actually replaced. Normally the cash account, supplemented by bank borrowing or credit from the manufacturer, is used to purchase the new machine. In either case there is a charge against the current ratio either by the reduction of cash or by the increase of current debts (funding operations and sinking funds against them are another problem).

No amount of setting up of reserves and deducting them from their related item can obviate the cash capital strain of replacement. Therefore the comparison of fixed assets net of reserves from year to year is liable to be misleading to the analyst, as this might well be a decreasing item which is thus emphasized. But the nearer approach to the need of replacement money to buy the machine is not at all emphasized and this becomes easily overlooked. It is probable that the replacement reserve more nearly approximates a debt each year that it approaches maturity.

Therefore, it is suggested that the better way to handle this item for purely analytical credit purposes is to carry the cost of machinery gross as an asset and accumulate a reserve account on the liability side of the statement. This item should be below the total debt and above the net worth.

With this set-up one can easily note, and not easily overlook, the relationship between net worth and cost of fixed assets, which, after all, measures the capital strain made by fixed asset investment or replacement.

Secondarily, one can measure the relation of net worth to debt, the debt strain, and also mentally estimate the actual and potential debt by adding the debt and reserves as these approach the period of application.

In our statement studies all ratios are computed without reference to reserves for depreciation. These represent no present value and so cannot be left in the net worth. Cumulatively they represent the approach of capital needs to buy replacements. Therefore they should not be subtracted from fixed assets in credit analysis, although proper to establish liquidating values. On this basis net worth is compared to the capital invested or to be invested in fixed assets or replacements.

RESERVES THAT ARE LIABILITIES

Probably the most common reserve under this heading is the liability for taxes. It is true in the case of these reserves, as it was in the former type, that only estimates can be made as to the extent of the liability. It is, however, necessary that some record appear on the books before the exact amount is determined. Reserves for taxes should be taken out of the year's income in which the profits or expense occurs, because it is just as much of an expense of doing business as any other item in the profit-and-loss account, and probably no debt is more certain of payment than a company's debt for taxes.

Including this account in with other reserves such as proprietorship reserves is incorrect, as no one but the government has any title to it. It comes first in the payment of liabilities and is preferred in enforced liquidation.

Other types of liability reserves, while not so current in nature, are those set up to restore leased property to its original condition. A company may make such changes on property leased that it would not be suitable for other businesses. The company therefore sets up a reserve which they estimate is necessary to restore the premises to their original condition.

When real estate is sold with a guaranty of maintenance in the future a reserve is created out of the proceeds of the sale to take care of these expenses. This maintenance may be for a specific time or in perpetuity. These last two liability reserves are not as common or as important as the tax reserve, but are given as additional illustrations by Couchman in his book, *The Balance Sheet.*

RESERVES THAT ARE PART OF SURPLUS

It is often desirable for a company to segregate out of its surplus account an amount either in one lump or in annual installments. An accumulation of a reserve of this nature is quite common when additional building space or improvements are contemplated. Such segregation of surplus puts a stop to the stockholders' cries for dividends, because when the reserve account is established it has definitely been taken out of surplus, which makes the possibility of melon-cutting less. This naturally does not always meet with the approval of the stockholders, who are quite prone to want all they can obtain in the way of dividends. Other accounts found under this general classification are reserves for shrinkage in inventory value—sinking fund reserves, reserves for retirement of preferred stock, or reserve for contingencies. Inasmuch as these accounts arise out of the surplus account they should, naturally, be placed just above the proprietorship or net-worth accounts. Occasionally a firm will have a reserve for dividends which will be paid but which have not been declared. Until declared they are a part of the accounting capital, after which they become a current liability.

There are many other types of reserves, but they are not so common on balance sheets generally. Different lines of business require captions for their reserve accounts which more accurately describe the reason for the account. Therefore, on insurance companies' statements we have an item of insurance reserve; contractors' statements contain a reserve for contract work in progress, mail-order houses have a reserve for prepaid orders, and newspapers or publishing houses and finance companies have accounts which clearly explain their reason for appearance such as reserve for unearned subscriptions and interest paid but not earned or unearned interest.

For analysis purposes it is quite common to include this classification of reserves known as surplus reserves or part of the accounting capital as net worth in computing the ratios involving net worth. There are arguments for and against this and opinion generally seems so evenly divided, and the reasons on both sides so logical and well known, that they need not be set down here.

HIDDEN RESERVES

Perhaps it would be well here to comment briefly on "hidden reserves." These reserves arise from increases in assets without an offsetting liability or capital item. A good example is the charging of improvements or plant expansion to expense of repairs and maintenance instead of to the plant account. This creates additional value to the assets which have been charged to expense.

Another way of creating secret reserves is to make excessive charges against operation, the offsetting credit being in a reserve for bad debts or depreciation account. It is really the duty of an auditor to make comments on such excessive reserves, as a banker cannot determine such charges usually unless he sees operating figures and has a good knowledge of the accounting profession. This is also an extremely easy way to deceive minority stockholders.

The writing down or understating of the inventory brings about the same result as the two previous examples.

DEPRECIATION RATES SHOULD BE FIXED

While it is common practice for some companies to make their depreciation charges flexible, it is not considered good practice. By this flexibility it is possible for a company to make large or excessive charges against operations in their more profitable years and small charges in the leaner years. The Treasury Department frowns against such practice. Such a procedure makes it impossible to establish rates for taxation purposes. There seems to be no good reason why the good years should suffer for the misfortunes of the bad.

Any variation from usual procedure in depreciation charges should be called to the banker's attention. Except in rare cases constant rates should be maintained.

CHAPTER V

Comparative Analysis

Bank credit was granted for so long a period on the basis of personal appreciation or by "the credit sense method" and withal was so successful that there has been a tremendous inertia working against a deeper application of analytical practice on the figure facts. When statements began to make their appearance they were in many instances not much more than memoranda. The borrower, in quest of a loan, might show these memoranda to his banker. The resulting discussion was of a cursory type in most instances, and the statement, if such it can be called, was filed in a manner similar to that used for filing ordinary correspondence. When data were filed in the earliest days they were intended to stay filed and no special effort was made to make them available.

The first real step toward an intensive use of the statement was taken by Mr. James G. Cannon some time about 1900 in the development of a comparative balance sheet. At this time a conception that is now quite generally accepted was first appreciated. Any one financial statement of one company, without outside data, is an anchored estimate. It in reality expresses merely a condition as at one single moment, and in no way indicates progress or retrogression. It is thoroughly stationary, like the single signpost along the highway—static, not dynamic. But business is economic motion, like the automobile passing along the highway. Its statements are its markers or signposts. By examining their successive proportions, noting changes in amounts and relative set-ups, the analysts can in a measure get some idea, to use another automobile simile, as to whether the business is laboring uphill, running on a fair and level highway, or rushing downhill at a dangerous speed. The originator of this thought, that statements were worth successive or serial comparison, took the first step toward a real analysis of the figure facts.

To bring about this comparison in an orderly and systematic way a further innovation was developed in the nature of a comparison sheet to which the figures of a series of statements could be transcribed. The innovation consisted in the bank transcribing the figures rather than simply filing the memorandum. To many even this simple procedure seemed a useless addition to the bank routine that would add greatly to the expense of clerk hire and produce little of real value. But little by little at first, and then suddenly, the practice developed, until today any bank with any system of organization has its comparison sheet.

As hardly any two statement reports are in all details identical in set-up, various combinations of items are usually made in accordance with the decisions of the department using the form. A previous chapter discussed nomenclature. As part of this discussion a simple set-up was offered which combines with the minimum of separation all of the usual statement data. This condensation goes perhaps to the extreme in the elimination of separate items, having as its object the preparation of as condensed a showing of data as possible in order to make statistical handling as easy and simple as possible. Many bank analysts are not content with such a simplification of nomenclature and use a much more detailed form. These differences are readily perceived from the specimen reproductions which form part of this chapter.

The analysis of statements by the preparation of a running comparison had not progressed far before the analysts appreciated a sharply defined difference between certain of the items. Among the assets there were some that would turn into cash or its equivalent in a short time and through the ordinary and regular processes of business. Certain liabilities mature in the near future also in the regular course of business. As has already been mentioned in the chapter on "Statement Nomenclature," Chapter III, definite classification under these two sets of conditions is necessary. Much misunderstanding has resulted from the careless use of words in this segregation. The phrases "current assets," "quick assets," and "liquid assets" have been used with too great a similarity by different men. One analyst uses the phrase "current assets" to cover what another analyst calls "quick assets." Either of these may be confused by a third man who calls such items "liquid." This lack of uniformity is unfortunate. It sprang from the early gropings for system in analysis and is a very direct evidence of the rather haphazard method by which modern analysis has developed. This further rather duplicated emphasis is made because at this time, in the discussion of comparative balance sheets, the terminology "current assets" will be used and to some reader the term may mean either of the other two headings. To make sure of what is meant reference should be made to Chapter III.

Assuming, then, such a distinction, we find that we have at the same time segregated from the total assets those from which funds will become available with which to meet such obligations as are maturing in the approximately near future. This quite naturally suggested that the sum total of all current assets and all current liabilities should be reckoned one against the other. With this appreciation the early analysts set about effecting a comparison on an arithmetical basis. They recognized that, even with the most conservative attitude toward evaluation, the current assets would rarely bring the full listed book value in a liquidation. A corollary conception quite naturally recognized that the current assets must be in excess of the current liabilities, to allow for this shrinkage in liquidating value, in order to produce funds from which to make current liability payment.

To bring about this kind of a comparison between these similar types of assets and liabilities three lines were usually used at the bottom of the comparison sheet. The first one for current assets, the second for current liabilities, and the third for the difference between the two. This seemingly natural grouping for subtraction purposes started future development of analytical tests off on the wrong foot. It was not long before analysts realized that this subtraction method might be misleading. The same margin between current assets and current liabilities might not mean the same thing and any reliance on it as a measure might become dangerous. A simple example may well be used to emphasize this fact, as follows:

	Company A	Company B
Current assets	$100,000	$200,000
Current liabilities	50,000	150,000
Margin	$ 50,000	$ 50,000

In the case of these two companies the margin between current assets and current liabilities is the same amount, $50,000. But in the first case this $50,000 is a marginal protection against liquidating shrinkage in $100,000 of current assets and in the second case liquidating shrinkage in $200,000. For the first it is a 50-per-cent protection and in the second it is only a 25-per-cent protection. A study of these figure facts brought a realization that proportion was not accommodated for in the subtraction method and that it was rather the relation that existed between the two main factors of current assets and liabilities rather than their arithmetical difference.

To establish this ratio, or expression of proportion, a fraction form was used as the expression, so that its reduction would result in a proportion. At this point we find the statistical method adopted lacking in logic. Because the arithmetical formula had accustomed analysts to see the current assets above the current liabilities, they put the current assets on the top of the fraction, making them the dividend and using the current liabilities as the denominator of the fraction, making them the divisor. As a matter of fact, practice simply took the arithmetical formula, drew a line between the top two items, and called the fraction the current ratio. In Company A this resulted as follows:

$$\frac{\text{Current assets, \$100,000}}{\text{Current liabilities, \$50,000}} = \frac{2}{1}$$

This fraction was then reduced to a phrase 2 to 1, meaning that there were two dollars of current assets for each dollar of current liabilities. Simple enough in practice, but with little real meaning above the arithmetical formula except as practice and usage has made analysts adept at mental calculation to get a further meaning.

If the arithmetical arrangement of the first two items had only been reversed from the start in developing the ratio, it would have been much more sensible. The formula would then have resulted in the following fraction for Company A.

$$\frac{\text{Current liabilities, \$50,000}}{\text{Current assets, \$100,000}} = \frac{1}{2}, \text{ or } 50\%$$

Such a current ratio would have at once given us a measure of liquidating requirement so as to produce sufficient funds to meet the current liabilities. For each one dollar of listed current assets one would have to get fifty cents in order to meet the current liability obligations. The difference between this and 100 per cent would measure the protection against shrinkage, in their case 50 per cent.

In the case of Company B the present current ratio is developed as follows:

$$\frac{200{,}000}{150{,}000} = \frac{4}{3} = 4 \text{ to } 3, \text{ or } 1.33 \text{ to } 1$$

If done as just mentioned, it would read:

$$\frac{150,000}{200,000} = \frac{3}{4} \text{ or } 75\%$$

This second expression means that the current assets would have to realize seventy five cents on each dollar in order to produce funds to meet the current liabilities, giving only a 25-per-cent protection.

But it would be futile to go against a custom so long established and deeply seated in the minds and practice of analysts. The current ratio as now used is a full, frank, and complete acknowledgment that the relationship between the items is the important thing. Full discussion of the current ratio will be reserved for a following chapter, in which it will be examined together with other ratios which have distinct bearings on it.

AN ACID TEST

Merchandise, as it normally appears on any statement, is a conglomerate. In a manufacturing company it may be raw material, partly finished goods, or completely finished product. In a preceding chapter this possibility of disproportion has been discussed under the heading of balancing inventories. In a distributing or strictly merchandising company the inventory includes both quickly moving and stagnant merchandise. There is always a question as to the real liquidating value of the inventory. There is always a question as to the basis on which the inventory was taken, both in its accuracy of pricing and in its real quantity. It is probably true that the inventory is the question mark or value problem in the current assets. In bulk it often makes up a large part of the current assets, not infrequently as much as one-half. Bearing in mind the perhaps startling effect on the current proportion or ratio that its possible depreciating liquidated value might have, a great many analysts have supplemented their measure of the total current assets against the total current liabilities by a comparison in which the inventory does not play a part. This has been called the "acid test."

In its briefest form the "acid test" consists of measuring the total of the cash and trade receivables against the total current liabilities. To meet the test satisfactorily this total must be equal to the current liabilities. This is a mere statement of the actual process which should be accompanied by some supporting argument or theory before being accepted.

Cash is of course free and obviously immediately available for use in debt reduction. Receivables are only one step removed from cash and are subject only to bad-debt shrinkage. They are not subject to price level change dangers. Therefore cash and receivables are almost exactly the offset in character to debts maturing in the near future. The very similarity between cash, receivables, and payables suggests the propriety of setting them into comparison. Furthermore, when looked at broadly, receivables and payables are identical in economic character except that they appear on different statements. The receivables of one company can quite easily be the payables of another company, in the standing of both of which the banker may be interested.

If this acid test is applied and the subject company meets the test then its current liabilities will not exceed the total of the cash and receivables. The whole value then of the inventory, whatever it may finally check out to be, becomes available as a buffer against loss by the creditors. Only the assets which are cash or nearly cash are relied upon primarily for current liability payment and the buffer or merchandise may fluctuate quite drastically without impairing payment ability. It is a somewhat drastic test which, while not always easy to meet, has the quality of conservatism. In using it, however, the analyst must distinguish such cases where the character of the industry would prevent the test functioning fairly and use a reasonable discretion.

The test is usually computed by the arithmetical process from the dollar statements on the comparison sheet. The relation is hardly ever reduced to a proportion and for the most part is a rough mental computation of totals.

COMPARISON FORMS

While nomenclature and consolidation of figures have many variations, there are primarily but two main distinctly different types of comparison set-up.

In the first of these the items making up the total of the current assets are listed at the top of the sheet and totaled. The several items making up the current liabilities are then listed below them and likewise totaled. Following this the total of the current liabilities is subtracted from the total of the current assets and the arithmetical difference listed as the excess of current assets, or working capital. Below this, again, the analyst spreads the non-current or fixed assets and adds them to the working-capital figure, getting a total of all assets less the current liabilities. Below this derived figure is a space to list the funded obligations, the total of which is subtracted, leaving the net worth. The net worth is followed by an item space for reserves, capital stock, and undivided profits, which are footed to secure another derived total of "capital liability and reserves." Those reserves which have been handled as deductions from assets are listed at the bottom as a memorandum. Certain important derived data comparisons and proportions are either listed or shown on the reverse of the sheet. The final data, a most interesting notation, are entered under a general heading, "contract," at the bottom of this general summary. This is a very proper thing to do, as it keeps before the loaning officer, who uses this sheet as a reminder in credit conferences, just what the bank has agreed to do.

The exhibit on page 94 is a reproduction of this sheet. Its study is more than ordinarily worth while, as it is one of the best of this type of comparison forms.

The second general type of comparison form differs from the one just discussed in that it maintains the set-up of a balanced statement. In this form the various items making up the current assets are listed at the top of the column. These are generally listed in the order of their cash expectancy, with cash at the head and those items that have most nearly approximated a cash position following. These are footed into a subtotal of the statement on a footing line indicating the "current assets." Below this are entered the plant assets followed by several blank lines, so that these may be footed as a memorandum in pencil if desired. Following these come the other non-current assets of one kind or another, with a footing line so that all of the fixed assets may be totaled. While not a universal method by any means, some careful analysts follow the total of the fixed assets by space in which to enter the purely fictitious assets such as goodwill and treasury stock, so that the whole column may be footed and produce the statement total as presented by the customer. (See page 96.)

On the liability side the items making up the current liability are listed at the top, so that they may be subfooted readily. Beneath this total are entered the funded debts, mortgages, or bonds, and the like, which are then added to the current debt, giving at a glance the total debt of the subject, both current and funded. Below the total debt space is left for entry of reserves, not deducted from assets, capital, surplus, and undivided profits. These can be added to the total debt, again balancing the total with the customers' report.

A single line is left between the "undivided profits" and the total upon which the analyst may make notation of the true net worth. This is the sum of the capital, sur-

(Omit Cents on this Comparison Sheet)

1	QUICK ASSETS				1
2	Cash on Hand				2
3	Cash in Bank				3
4	Notes Receivable of Customers				4
5	Trade Acceptances of Customers				5
6	Accounts Receivable of Customers – Not Due				6
7	Accounts Receivable of Customers – Past Due				7
8	Merchandise – Finished				8
9	Merchandise – Unfinished				9
10	Merchandise – Raw Materials				10
11	U.S. Govt. and Listed Securities				11
12					12
13					13
14	Total Quick Assets				14
15	QUICK LIABILITIES				15
16	Notes Payable for Merchandise				16
17	Trade Acceptances – Payable				17
18	Notes Payable to Banks				18
19	Bankers Acceptances				19
20	Notes Payable for Paper Sold				20
21	Notes and Accounts Payable – Personal				21
22	Accounts Payable – Not Due				22
23	Accounts Payable – Past due				23
24	Provision for Federal Taxes				24
25	Accrued Interest, Other Taxes, Etc.				25
26					26
27					27
28					28
29	Total Quick Liabilities				29
30	EXCESS QUICK ASSETS				30
31	OTHER ASSETS				31
32	Due from Controlled Concerns				32
33	Stocks, Bonds and Investments				33
34	Land				34
35	Buildings				35
36	Machinery, Equipment, Etc.				36
37	Notes and Accounts Receivable – Personal				37
38	Good will, Patents and Trademarks				38
39	Stores, Supplies, Etc.				39
40	Deferred				40
41					41
42					42
43					43
44	Total Assets Less Quick Liabilities				44
45	OTHER LIABILITIES				45
46	Mortgages				46
47	Bonded Debt				47
48					48
49					49
50	Total Other Liabilities				50
51	NET WORTH				51
52	RESERVES				52
53					53
54					54
55					55
56	Capital Stock – Preferred Outstanding				56
57					57
58	Capital Stock – Common Outstanding				58
59	Capital Stock – Non-Par				59
60					60
61	Undivided Surplus				61
62	Total Capital Liabilities and Reserves				62
63	Reserves Deducted from Assets				63
64					64
65					65
66					66

Reverse side of form on page 94

(Omit Hundreds and Cents on this Comparison Sheet)

Quick Assets								
Quick Liabilities								
Working Capital								
Total Liabilities								
True Net Worth								
Ratio Q. A. to Q. L.								
Ratio Q. A. to T. L.								
Ratio T. L. to True N. W.								
Net Sales								
Net Profit or Loss								
% Profits to Sales								
Additions or Deductions								
Dividends on Pfd. Stock								
Dividends on Com. Stock								
Stock Dividends								
Withdrawals								
Ratio Inventory to Sales								
Ratio Receivables—Sales								
Approx. Mdse. Turnover								
Deposits with Us								
Secured Loans with Us								
Unsecured Loans with Us								
Customers Paper with Us								
Trade Accept. with Us								
Bankers Accept. with Us								
Contingent Lia. Reported								
Insurance on Merchandise								
Ins. on Bldgs. and Equip.								

CONTRACT

plus, and undivided profits minus the total of all fictitious or purely book-balancing assets.

The statement proper is usually followed by a memorandum of sales, profits, and dividends, together with the current ratio already discussed. The following form is an example of this set-up. At this point the reader is asked to disregard lines 54 to 60, inclusive, which will be better appreciated after reading those chapters which will deal with ratios in analysis.

The two forms explained and shown indicate the common types of comparison form from which there may be some

NAME												
ASSETS	Dates											
Cash	1									1		
Notes Rec. and Acceptances, Customers	2									2		
Accts. Rec. Customers	3									3		
Merchandise Inventory	4									4		
Listed Securities	5									5		
	6									6		
	7									7		
Current Assets	8									8		
Land	9									9		
Buildings	10									10		
Machinery and Equipment	11									11		
	12									12		
	13									13		
Due from Controlled or Allied Concerns	14									14		
Due from Officers, Stockholders, etc.	15									15		
Non-Listed Securities	16									16		
Stores and Supplies	17									17		
Prepaid Expense Items	18									18		
	19									19		
	20									20		
Fixed Assets	21									21		
Good Will	22									22		
Treasury Stock	23									23		
Total												
Liabilities												
Notes Payable, Mdse.	24									24		
Notes Payable, Depositary Banks	25									25		
Notes Payable, Sold Through Brokers	26									26		
Notes Payable, Otherwise Issued	27									27		
Bankers Acceptances	28									28		
Letter of Credit Liability	29									29		
Accounts Payable, Mdse.	30									30		
Accounts Payable, Other	31									31		
Trade Acceptances, Payable	32									32		
Deposits of Money	33									33		
Provision for Federal Taxes	34									34		
Accruals, Other Taxes, Int., etc.	35									35		
Part Funded Debts Presently Maturing	36									36		
	37									37		
	38									38		
Current Liability	39									39		
Mortgages	40									40		
Bonded Debts	41									41		
	42									42		
Total Debt	43									43		
Reserves	44									44		
	45									45		
Capital	46									46		
Surplus and Undivided Profits	47									47		
	48									48		
Net Worth 46 + 47 — 23 — (22?)	49									49		
Total	50									50		
Net Profits	51									51		
Dividends	52									52		
Ratios												
Current Ratio 8 ÷ 39	53									53		
Mdse. to Rec. 4 ÷ (2 + 3)	54									54		
Worth to Fixed 49 ÷ 21	55									55		
Worth to Debt 49 ÷ 43	56									56		
Sales to Rec. 61 ÷ (2 + 3)	57									57		
Sales to Mdse. 61 ÷ 4	58									58		
Sales to Fixed 61 ÷ 21	59									59		
Sales to Worth 61 ÷ 49	60									60		
Sales	61									61		

slight deviation in wording, ruling, and the like. There is a third form, which will be explained shortly, but prior to such explanation it may be well to draw a short comparison between the two already indicated.

In the opinion of the authors the second style has several advantages over the first. To begin with, it is a balanced set-up that produces the same statement footing for assets and liabilities and which in most instances checks exactly with the statement as submitted by the customer. In the second place, the second form indicates quite clearly the total debt which is believed to be a very important point in analysis. Furthermore, this total debt is so placed as to be in easy position for immediate and constant comparison to the net worth, another important analytical test for goodness. Finally, the set-up follows the usual accounting set-up in appearance. It seems good practice to keep as nearly parallel to usual set-up as practical for the sake of ready comparison to original figures, if for nothing else. Both forms have a useful memorandum in the numbering of the lines on the sheet, so that items several columns over may be readily traced to their proper item heading. These sheets are often extended up to ten and twelve columns, and the line number data can well be inset at the right of each four columns.

The third form mentioned is really a shorter exhibit of the second, more condensed. It has, however, several additions which the reader may pass over at the present. These are the "100% statement" columns and the "ratios and index." The "100% statement" will be discussed in the next chapter, after reading which the use of these two subcolumns will be more apparent. That subcolumn "group" refers to an industry background. This is a rather important and newer method of presenting analytical data which will be discussed in a chapter by itself. The part of this form, "ratios and index," is developed for use of all the testing ratios which will be the main theme of the next several

ASSETS				100% Statements							100% Statements			
				Co.		Group					Co.		Group	
Cash														
Receivables														
Inventory														
Listed Securities														
Miscellaneous														
Total Current														
Plant and Equipment														
Miscellaneous														
Total Fixed														
Good Will														
Total Fixed														
Treasury Stock														
Total														

LIABILITIES

Payables														
Taxes														
Miscellaneous														
Total Current														
Funded														
Total Debt														
Reserves														
Capital Stock														
Surplus														
Net Worth														
Total														
Sales														

RATIOS AND INDEX

Wt.	Co.	Group	Rel.	Value	Co.	Group	Rel.	Value
Current								
Mdse-Rec.								
Worth-Fixed								
Worth-Debt								
Sales-Rec.								
Sales-Mdse.								
Sales-Fixed								
Sales-Worth								
Index								

COMMENTS

chapters and which in fact constitute the backbone of this newer and more complete statement analysis. When the theories necessitating the use of this part of the form are presented, reproductions of these parts of this form will be shown with the text for the greater ease of understanding by the reader. This shorter form, with its attending data, is presented here simply because in the analytical work of the authors it has been found more concise and readily usable than the longer forms. Its condensations eliminate no essential data and add much to completeness. (See page 98.)

In summing up, in general, comparative analysis has contributed a recognition of the necessity of using statements in comparative sequence in order to study development rather than stationary condition. It has recognized the importance of proportion in the acceptance of the current ratio. But it has stopped dangerously short of anything approaching completeness in that it has produced on examination no record of equally important proportions, leaving them to mental reservation with all the vagueness of lack of accuracy and absence of historical record which this indicates. Furthermore, the mere comparison of dollar figures makes possible that misconception of size for strength, and precludes the easy and ready cross comparison of similar companies of greatly differing size. The correction of some of these omissions is the object of substituting proportional or ratio analysis as it will from now on be discussed.

CHAPTER VI

Common-size Statements

Comparative statement analysis has been of great importance in the development of a scientific handling of the credit problem because it has established the practice of continuous and recorded analysis of successive property statements. Furthermore, it has developed a recognition of the essential importance of proportion and has even established one such proportion through the acceptance of the current ratio as a test for credit goodness.

Bulk figures, however, are often misleading in that size is easily mistaken for strength. Size obliterates a sense of proportion because figures running into hundreds of thousands of dollars or even millions are difficult to handle mentally with accuracy. In analysis there are two types of proportion to be considered. For want of a better phraseology these may be called the component and salient proportions.

By component proportions one might well mean those proportions which indicate the relative distribution of a whole into its component parts, indicating what percentage of the whole each part represented. The inspection of a statement expressed in dollars gives only a vague expression of its component proportions and even such mental reservations as may be made in the reading are not recordable. Analysis would be much more clearly defined if a method were evolved by which such component proportions were immediately recognized and easily recordable.

By salient proportions one might mean the proportional relationships between the important elements of any statement. The current ratio, as generally developed and accepted, is such a salient proportion. It is unquestionably an important strength measurement in that it establishes the relation between debts maturing in a near future and the assets from which payment will normally be effected. Another salient proportion is that which has been discussed under the heading of "the acid test." In both of these the relationship as developed is as between two separate groups of units to each other rather than a comparison of each of them to a common figure. These salient proportions have of recent years come under consideration in the discussions and various articles on ratio analysis. An appreciation of their value is growing rapidly and their most recent developments and use form the text of the next several chapters.

The following figures in a condensed form will illustrate the point:

	A	B
Cash	$ 3,445	$ 301
Receivables	9,269	3,583
Inventory	4,871	2,358
Listed securities	5,700	
Total current	23,285	6,242
Total fixed	74,782	13,033
Total	98,067	19,275
Payables	$ 12,550	$ 2,900
Taxes	1,690	
Total current	14,240	2,900
Funded debt	30,000	6,000
Total debt	44,240	8,900
Reserves	$ 10,675	$ 2,050
Net worth	43,152	8,325
Total	98,067	19,275
Sales	$109,250	$30,770

The spreading of successive statements on a comparison sheet does not then accomplish the best results, although valuable. The dollar figures lack an accurate expression of the component proportions. Mere increases in bulk may be misleading and some further development of the figure facts is necessary. The 100 per cent or common-size statement seems to offer a solution. By its use the component proportions are at once evident, and accurate cross comparison with similar companies or facts is made possible.

When the figures of two statements are approximately the same size, it is not difficult to observe the presence of a large amount of inventory in one as compared with the other. However, if the above statements are examined, it is likely to lead to confusion when the dollar figures are compared, unless separate computations are made relating the several items to the total or developing some ratios. The proportion of the total figures, which is tied up in receivables, inventory, debt, and worth, is extremely important in a thorough analysis. Inasmuch as a direct comparison will not give a good picture of the percentages so invested, some method must be devised which will show at a glance the make-up of the total figures.

100 PER CENT STATEMENT

The 100 per cent statement, also called the common-size statement, gets its name from the fact that the total footings of any statement are considered equal to 100 per cent. Inasmuch as the total footings of any or all statements are equal to 100 per cent, they are then reduced to one common size. This allows easy comparison, and at the same time does not destroy any of the proportions of the exhibit.

This 100 per cent statement is obtained by dividing each item on the statement by the total footings and expressing each item in its percentage of the total. In the computation of this 100 per cent statement, it is customary for the writers to deduct the goodwill, patents, trade-marks, treasury stock and other intangibles from the total and also from the net worth. This then gives the percentage invested in each of the tangible assets.

The computation of this 100 per cent statement is not a long or difficult process, but can be done on the condensed statement above shown in not more than three minutes. It, of course, requires a computing machine, or a slide rule commonly known as a "guessing stick," for this computation. The authors have used a Monroe Calculator which has proved very satisfactory. If such a machine is used, the operator should get the reciprocal of the total, put this reciprocal into the keyboard, and multiply each item by this reciprocal.

The computations for Statement A are as follows:

	Dollar statement	Process	100% statement
Cash	3,445	$\frac{3,445}{98,067}$	3.51%
Receivables	9,269	$\frac{9,269}{98,067}$	9.45
Inventory	4,871	$\frac{4,871}{98,067}$	4.97
Listed securities	5,700	$\frac{5,700}{98,067}$	5.81
Total current	23,285	$\frac{23,285}{98,067}$	23.74
Total fixed	74,782	$\frac{74,782}{98,067}$	76.26
Total	98,067		100.00%
Payables	12,550	$\frac{12,550}{98,067}$	12.80%
Taxes	1,690	$\frac{1,690}{98,067}$	1.72
Total current	14,240	$\frac{14,240}{98,067}$	14.52
Funded debt	30,000	$\frac{30,000}{98,067}$	30.59
Total debt	44,240	$\frac{44,240}{98,067}$	45.11

Reserves	10,675	$\frac{10,675}{98,067}$	10.89
Net worth	43,152	$\frac{43,152}{98,067}$	44.00
Total	98,067		100.00%
Sales	109,250	$\frac{109,250}{98,067}$	111.40%

This gives us an immediate picture of the relative make-up of the dollar figure. Out of every $100 of total footings this company has $3.51 in cash, $9.45 in receivables, $4.97 in inventory, and so on through the rest of the statement.

Reverting to the two statements A and B given earlier in this chapter, the value of this common-size statement is even more evident. These two statements are shown side by side for direct comparison.

	A	B
Cash	3.51	1.56
Receivables	9.45	18.59
Inventory	4.97	12.23
Listed securities	5.81	—
Total current	23.74	32.38
Total fixed	76.26	67.62
Total	100.00	100.00
Payables	12.80	15.05
Taxes	1.72	—
Total current	14.52	15.05
Funded debt	30.59	31.13
Total debt	45.11	46.18
Reserves	10.89	10.63
Net worth	44.00	43.19
Total	100.00	100.00
Sales	111.40	159.64

The above exhibit indicates that the cash position of Company A is much better than that of B, but that the latter has a better current position and will also pass the acid test. The sales of Company B are much greater on a percentage basis than A, and, if the companies are working on the same margin of profit, should build up a better worth position. Company A has $76.26 out of every $100 of total footings invested in fixed assets, against $67.62 for Company B, indicating a greater solidifying of capital by fixed investment. This, of course, is merely expressing the percentage figures in dollars but on a comparable basis.

This 100 per cent statement is also useful in showing the trend of a single company over a period of years, which the dollar figures will not show. Again this common-size statement can be used in measuring a single company against an industry condition. The group or industry 100 per cent statement will be explained in a later chapter, so no additional comments will be made at this time.

TIME AND LABOR ELEMENT

As previously mentioned, the computation of this 100 per cent statement requires about three minutes. This, of course, is after the original property statement has been put on a condensed comparative statement. The spreading of statements on a comparison form is, however, a common practice and forms no part of the cost in computing the expense of the common-size statement. The actual time of three minutes means that the salary cost of a $100 clerk amounts to about three cents per statement, figuring 160 working hours per month. This, of course, is not strictly accurate, but the amount on a cents basis is so small that detailed computations are unnecessary. The original cost of the machine will vary according to the type purchased, but runs from $275 to $650. These machines may be used for a number of different purposes in bank clerical work, and as they are very well constructed, they have a long life, so the original investment is not so great as is generally thought.

Expenses in a credit department are often pared down too closely. Considered an unproductive department, it is difficult to obtain funds for office accessories that will not only make the work easier for employees, but in making the work easier will make it possible for them to be more productive, which in turn will be to the advantage of the officers, in that they will obtain much better analyses by which to make their credit decision. If one stopped to consider the cost per dollar of loans of this additional machine investment and clerk time, the figure would be so ridiculously insignificant that it would be much like comparing a drop to a bucket of water.

FUTURE USE

It is not in the province of the writers to attempt to prognosticate the use of the 100 per cent statement. The method is simple in procedure, easy of application, quick of development, and the acceptance of its importance is growing as it is becoming better known and understood. During the past three years there is a very considerable increase in its use, and with the many advantages in its favor there seems no reason why the 100 per cent or common-size statement should not be accepted practice.

Developing usable type figures for different industries is only possible by the use of this 100 per cent statement or some equivalent, and because of the increasing importance of studying industries by groups the future of the common-size statement seems assured.

CHAPTER VII

The Static Ratios

In the preceding chapter the suggestion was made that proportions, as far as statement analysis is concerned, might be either component or salient. The component proportions were shown in the development of the 100 per cent, or common-size, statement in which each item is expressed in its percentage relation to the whole statement.

The present discussion relates to those other ratios or proportions that are between certain salient items rather than between these items and a common total of which they are a part. The current ratio has been classified as one such major salient ratio. The relation of the total of cash and receivables to current liabilities, although not customarily reduced to a proportion or ratio figure, is also such a salient ratio or would be if customarily developed.

These salient ratios divide themselves quite naturally into two main groups. In the first of these we find those ratios which are computed from items found on the balance sheet itself. Inasmuch as the balance sheet reflects the position of the company at rest for an instant of time, they are developed from facts that are momentarily at a standstill and for descriptive purposes have, therefore, been called static ratios. The derivation of the word static comes from the Greek word *στᾱτικός* (causing to stand). The second grouping of ratios covers those in which sales are related to one of the statement items. These ratios express energy, effectiveness of action, or power. Again for descriptive purposes these ratios have been called the dynamic ratios. The derivation is again from a Greek word, *δῡνᾱμις* (power).

The current ratio holds first position among the static ratios because it is the direct inheritance of the earlier method of analysis. While not in all instances the most important or controlling ratio, it always has a place of prime importance in any analysis. Moreover, it is a generally accepted ratio, the value of which is universally acknowledged. In fact, this very acknowledgment and use has in a large measure overemphasized its importance, and all too frequently unsafe credits have been extended because of its preconceived importance as a strength measure, and too many reasonable loans refused because its apparent weakness has scared off an overcautious credit man.

The current ratio has already come in for some discussion in the chapter dealing with comparative analysis. At that time, however, it was used primarily as an indication and acknowledgment that something was needed beyond the simple comparison of the dollar figures. Its expression by inversion was discussed and some of its qualities touched upon. Even at the risk of some repetition it seems important to reconsider this ratio at this point, where it will be in close comparison with its corollary ratios, so that the text on ratios may be complete.

The current ratio is developed by marshaling two similar sets of facts with different qualities and setting them into relationship. Current assets and current liabilities are similar in their closeness to maturity. The first will normally turn into cash or its equivalent in the near future, putting the owner in funds with which to pay debts. The second will reach a due date in a near future, at which time the creditor expects payment. From the liquidation of the first the second will be paid.

The ordinary process of computation is to divide the current assets by the current liabilities and express the result as a direct quotient. The mathematics of the process may be more readily understood if examined as an actual arithmetical problem. Thus with $200 of current assets and $100 of current liabilities the ratio is first expressed, in a fraction, as $\frac{200}{100}$. After the division the quotient becomes 2. A single number does not express relation, and if, for this example, we were to state the current ratio as 2, we would have a fact but secondarily expressive. Taken another way, the data as given might be listed by stating that there are \$200 of current assets for each \$100 of current liabilities. If this be expressed through the reduction by fractional method the current ratio would read—for each two units of current assets there is an offset of one unit of current liabilities. For the sake of saving time and space this has been shortened by common practice, so that it is spoken of and recorded as "2 to 1" or "2 for 1."

If all ratios resulted in whole numbers and if no refinement of measurement beyond the first whole number were ever desirable, such an expression would not be at all objectionable because practice might readily accommodate us to saying "the current ratio is two." But refinement of expression for the sake of greater accuracy is often desirable. We find it necessary or advisable to express current ratios of "2½ to 1" or "¾ to 1." When we use such expressions for the relative comparison of the current ratio of several companies to one another we find the expression cumbersome. Given two companies A and B with current ratios of "2 to 1" and "1¾ to 1," the relative current ratio strength of A to B would be expressed by a compound equation as follows:

A is to B as "2 to 1" is to "1¾ to 1"

In fraction form this would read:

$$\frac{A}{B} = \frac{2 \text{ to } 1}{1\frac{3}{4} \text{ to } 1} = 1.14$$

This may seem ridiculously simple, unnecessary, or primer "stuff," but it seems necessary to emphasize the cumbersome method of phrase expression to secure a recognition of its lack of efficiency in statistical computation. Common practice developed the current ratio as a test, but did not use statistical sense because of the inverse method of expression. As long as only one ratio is used and no comparison between companies tried, the phrase method of presentation, recording, or discussion is not so undesirable. But when analysis begins the comparison of single company proportions with other company proportions or with typical proportions the phrase method is cumbersome in even the typographical angle and difficult to handle by further reducing one ratio to its relation to the same ratio for some other statement. The method of intensive analysis, based on several ratios, demands the simplest and most concise form of expression which may be possible. The users of the phrase method have been difficult to convince and therefore the explanation of a more concise and more easily recordable and usable method of tabulation or expression of these ratios has been preceded by this listing of objections to the present accepted method of expression.

The expression of a relationship can be achieved in one number if that number be a percentage. A percentage figure is the result of reducing a relationship of two numbers to each other. To the authors a current ratio as between \$200 of current assets and \$100 of current liabilities is a 200 per cent current ratio. The "1 and ¾ to 1" current ratio becomes a 175 per cent current ratio. The relative current ratio strength of Company A to Company B then is as 200 is to 175 or 1 and ¾, or B is $\frac{175}{200}$ as strong as A, or ⅞. Furthermore, the finer gradations of the ratio can be expressed in decimals rather than in fractions, which makes them easier to multiply, divide, add, or subtract, or use in any statistical compilation. The following table indicates the two methods showing quite clearly the greater accuracy and definiteness of the percentage method of expression over the phrase method.

Current assets	Current liabilities	Phrase	Percentage
$275,387	$138,374	$1\frac{137}{138}$ to 1	199
37,350	19,475	$1\frac{17}{19}$ to 1	191
427,385	139,487	$3\frac{9}{139}$ to 1	306
187,750	116,311	$1\frac{71}{116}$ to 1	161

The perfectly obvious cumbersomeness of the phrase method generally results in reducing the phrase fraction to a first decimal, so that these four ratios would be listed as "2 to 1," "1.9 to 1," "3 to 1" and "1.6 to 1." The percentage method carries the division one digit further and substitutes a % sign for the "to 1." This may again seem a distinction without a real difference, but the authors in making thousands of computations have found from actual experience that, once understood, the percentage expression is far and away the simpler expression with which to work. In adapting this to any ratio the first item, here the current assets, is always the dividend, and the second item, here the current liabilities, is always the divisor. The resulting quotient is carried out to two digits beyond the decimal point and recorded as a percentage. When a computing machine is used the carrying out to this extra digit is a matter of fractions of a second in time for any one ratio and is therefore a negligible addition in work.

In reading the current ratio, or for that matter any ratio, the analyst must remember that the ratio for any single statement is only a momentary pause in the movement for that company. The same identical current ratio figure for two separate companies may not represent the same credit condition at all. This again can be visualized and understood best by the reading of a chart of record. For this purpose two hypothetical current ratio records are listed here for a period of years.

CURRENT RATIO TREND TABLE

Years	First	Second	Third	Fourth	Fifth
Company A	175	187	196	201	210
Company B	250	235	225	215	210

If read in the fifth year without reference to preceding record, both companies have the same current ratio, 210 per cent. But Company A has come up to this figure by four steady improvements. Company B, on the other hand, has fallen to this position by four steady declines. Unquestionably the potential credit strength of the two companies is quite different. The executive ability behind Company A has been able to work the company into a more liquid position, while the absence of this ability is equally well defined by the decline of the ratio for Company B. The value of the use of the current ratio lies in its record and direction of movement, not in its one-time point of rest. This thought is introduced to put the analyst on guard against formulating a credit opinion on any one statement. In considering new loan relations or the purchase of commercial paper the banker should study the record for at least three and if possible five years, so that he may measure the direction of movement as well as the single position.

In reading the current ratio record it is not entirely safe to go by its changes without making an allowance for the changing influences of general business conditions. One of the principal of these influences is the changing price level and costs of production, such as wage scales. With any more or less necessary physical volume of inventory to meet customer demand, changes in price level have a direct effect on inventory as expressed in dollars. For example, a mythical merchant may have to carry one thousand units of merchandise at a unit cost of one dollar. This would come before the statement analyst as an inventory of $1,000. If the physical volume of business remained the same, necessitating the same physical inventory, for the next statement but the cost per unit rises to one dollar and a half, the inventory would come before the analyst as $1,500. It would appear greater in dollars while remaining the same in physical volume.

For the sake of explanatory argument we must at this point make several assumptions which in actual experience would not exist. As we are analyzing only the effect of inventory cost, the first assumption is that the only current asset is inventory. A further assumption is that in the first instance there is a sufficient net worth or owner's capital to provide $500 with which to purchase merchandise, and that the subject must borrow an additional $500, either as bank loans or open trade accounts, in order to purchase the $1,000 of inventory.

The first condition would be current assets, represented by merchandise at cost, $1,000 and current debts of $500. This is a 200-per-cent current ratio. Again, in order to be fair, a further assumption is made indicating that the subject carries on its operation profitably between the two statements and adds 20 per cent, or $100, to its net worth. The company then, at the time of the second statement, would have applied $600, its net worth, to the purchase of inventory. As this inventory cost $1,500, it would have had to incur a debt of $900 to effect the purchase of the inventory. The current ratio would then be the relation as between current assets of $1,500 and current liabilities of $900, or 166 per cent. As a practical matter the effect of changing price and cost levels would not be quite so simple as this, due to the presence of other assets and liabilities and a variation of other more or less offsetting or aggravating influences. But it outlines an arithmetical law which must be considered at all times in reading the current ratio. This is that the addition of an equal amount to both elements of the current ratio will depress the ratio, and that to maintain the ratio even at its former level the addition to the current assets must be in the same proportion to the addition to the current liabilities as was the current ratio before the increase. With a current ratio of 200 per cent we must add two dollars of current assets for every dollar added to current liabilities to maintain this 200 per cent relation. The converse of this is also true. While taken as here outlined, the problem seems ridiculously simple. This simplicity, however, is often obscured in actual practice by the size of the dollar statement. But a keen appreciation of the working and effect of these business condition changes should always be at least a mental reservation when reading the successive current ratios as a test for credit strength.

MERCHANDISE AND RECEIVABLES

In comparative analysis merchandise and receivables are grouped in the same type of assets. They are both considered current in their nature. By receivables, in this present discussion, are meant those receivables that are the result of selling or commercial transaction, and not such accounts or notes receivable as may be due from officers, directors, employees, subsidiaries, or any other source not the direct result of merchandising. More frequently than not the merchandise and the receivables make up the bulk of the current assets. In the simple process of adding them together and into the total of current assets they are given identical treatment, as if they were of equal quality and effect on the general and credit rating or strength of the company. This is not the actual fact, however, and their differing qualities, characteristics, and the effect of a change in their relationship on the salient proportions of the subject are highly important.

Merchandise represents an asset carried at the cost of acquisition. This represents the cost or purchase price of materials and fabricating costs to date at the time of the statement. If, however, the raw-material market falls so that the merchandise could be replaced at a lesser cost, then good practice demands that the merchandise inventory be reduced to a comparable basis. The merchandise figure, in other words, is not supposed to contain any profit at any time. It is basic.

On the other hand, receivables represent a totally different condition. Merchandise has gone through the process of sale and the ledger charges against the company's debtors are on the basis of a sales price. As merchandising is carried on normally at some profit or mark up of cost price to establish selling price, there becomes evident a very definite difference between receivables and merchandise. The receivables include both the cost price of the merchandise and profit on sales. A given number of physical units, say 1,000, may have been listed as merchandise at a unit cost of one dollar or $1,000. In the process of sale it would not be at all abnormal to have the cost price advanced 50 per cent, so that after conversion into receivables $1,000 would disappear from merchandise inventory and $1,500 appear as receivables.

The period prior to actual sale absorbs all the cost of production or acquisition which is offset against the added value of the merchandise. Actual selling expense has been met, perhaps by some increases in obligation or perhaps by an outlay of current income, with the net worth as the balance account. But even though final selling process may add somewhat, through prolonged carrying necessity, to liability obligation, the process of conversion from inventory into receivables and any such increase in liability need in no way be contemporaneous or in proportion. Expenditures from cash account for expenses are charges against profit and loss, eventually finding their way into the establishment of the net worth. The liability item is affected only when a period of steady excess of outlay over income from operation depletes the cash position. As sales represent payment for merchandise at the cost price plus, and purchases of merchandise at cost price only, the collection from sales should produce an increase in cash account far greater than selling expense. Therefore, the offset of profit and loss addition, through mark up for sale and decrease through selling expense after fabrication, divorces the transition from merchandise to receivables from any borrowing necessity at or perhaps even approximately near the actual time of sale. There is no direct relation.

In order to indicate certain arithmetical changes which a change from a preponderance of merchandise to a preponderance of receivables in the current assets will have on statement proportions, the example method will be used. It will be necessary to work again under a series of assumptions. In these assumed cases the effects of change are emphasized, and it is for that reason that they are used. But under ordinary conditions the same tendencies exist and the same forces are operative, although the extent of their effects may not be as noticeable when merged in the bulk of other data.

The first assumption is that a certain merchant has $50 of merchandise as his sole asset, and against it owes a bill of $25, with a $25 net worth to balance the statement. This establishes a current ratio of 200 per cent.

The second assumption is that he sells his whole merchandise-creating receivables and that his sales price is on a 50-per-cent mark-up basis, so that the receivables appear on his record as $75. The actual transformation through sale has not necessitated any increase in his debt. Therefore we find that his statement would show $75 current assets, $25 current debt, and $50 net worth. This is evidently a rise in the current ratio from 200 per cent to 300 per cent, which superficially indicates a current strength that is one-half greater or stronger than the first case.

A shifting of the preponderance in the current ratio assets from merchandise to receivables has a mathematical effect upon the current ratio. This results from entering upon the books an amount at the cost plus profit price for receivables that in the merchandise state represented a certain number of physical units carried at a cost price. Whenever the transaction is one in which a profit has been made, conversion increases the bulk amount of the current assets by the amount of the profit, and the offsetting increase on the liability side of the statement is in the undivided profits or net worth, not in the current liabilities. Therefore this change of balance, shown by a decrease in the relation of merchandise to receivables or greater proportional conversion into receivables, must by the very process of simple arithmetic raise the current ratio.

The arithmetical effect on the current ratio of converting merchandise into receivables is positive. It is positive quite without respect as to whether analysts believe either of the two conditions, preponderance of merchandise and preponderance of receivables, is a stronger position. This is quite another matter and quite outside the question so far discussed. It remains a fact that either an upward or a downward movement of the current ratio may have been largely or even entirely due to some conversion or movement of this ratio between merchandise and receivables. But the careful analyst should watch the variations of this ratio so that he may appreciate in some degree that the change in the current ratio may be basic, such as is caused by a proportional increase or decrease in current liabilities or only a change due to form of asset.

This ratio has a second and probably more important use for the analyst. This is in its connection with the swings of business so commonly called the "business cycle," and changes in price level which generally accompany it. As business begins to revive and confidence picks up there is a renewing interest in replenishment of merchandise inventories. Prices harden and, when demand increases, actually stiffen and start to go up. Not uncommonly there comes an actual buying competition for goods and the seller's market comes into being. Profits are increased by the increased replacement value of the goods on hand, which are sold not in relation to their original cost, but in direct relation to the upward movement of raw-material prices. In such a period an ample supply of merchandise logically results in expanding profits. But as the crest of this phase is reached, when productive capacity has been stimulated and supplies of merchandise are abundant, another condition is confronted. Consumers have been buying almost without regard to price; the buying rush has been feverish. Consumer demand is somewhat satisfied and the consumer begins to consider price. He stops his inane buying. To turn the merchandise, first one and then another and then an avalanche of price reductions appear. To have excessive inventories at such a time is to cultivate losses.

The analyst who is at all alive to the basic economic factors of business change should want to note whether his risks are preponderatingly short of inventory and long on receivables when it is good to have merchandise, and *vice versa*. The wise merchant, who does not try to make that last and often fateful turnover, but lets his merchandise liquidate to its lowest possible ebb before the crisis and price-falling period, may cut himself off from some paper profits while his less wise competitor may be creating definite losses by unwisely allowing his merchandise to accumulate. When merchandise has been sold and becomes receivables it is free from the effect of price changes.

WORTH AND DEBT

Before entering into a discussion of this ratio it is necessary to establish an economic understanding of the terms of the ratio. The economists speak of wealth as all useful or agreeable things that have exchangeable value. The wealth of any company is represented on the asset side of its statement. Here we find those things it owns, with which it fabricates, or which it has for exchange or sale. If these be real, then they are all wealth, they have value, and can be exchanged for other things or money.

It is commonly understood and agreed that any enterprise must have some wealth, or capital, with which to start business. Plants must be bought or erected, merchandise or raw materials purchased for fabrication or for trading. Anyone who wishes to engage in business as a manufacturer or a merchant must have something with which to begin, something to exchange for the things he needs in the process of business.

In its simplest form a man may have $10,000 in money and wish to engage in business for himself. He may wish to be a dry-goods merchant. First of all, he must find a suitable place in which to conduct this business. He may rent the quarters, but he will need some equipment—a few cases or shelves, a desk, some chairs, a typewriter, and some stationery. The minimum of these may cost $500. He then has $9,500 to spend for merchandise. He opens a bank account and agrees to carry $500 on deposit. This leaves him $9,000 which he invests in merchandise. After thus establishing himself he seeks for customers and it is presumed he is successful. It is assumed that he sells off half of his merchandise quite promptly and that he sells it for 20 per cent advance over cost. His customers demand terms of sixty or ninety days so that accounts receivable appear on his books of record. If at this time, before any of the accounts were paid, he were to prepare a statement it would be as follows:

ASSETS

Cash	$ 500
Receivables	5,400
Merchandise	4,500
Furniture and fixtures	500
Total	$10,900

LIABILITIES

Original capital	$10,000
Profit and loss	900
Total	$10,900
Sales for period	$ 5,400

But such a simple condition rarely exists in a concern that has been operating for any length of time. The merchant finds that he must replenish his merchandise stock in order to keep it balanced with the sales demand. He must buy more merchandise. In the simple example his cash on hand is not sufficient so he buys on credit, either by bank loan or commercial credit. If it be assumed that he buys an additional $4,500 of merchandise, simply to bring his inventory back to the original amount his statement would then read:

ASSETS

Cash	$ 500
Receivables	5,400
Merchandise	9,000
Furniture and fixtures	500
Total	$15,400

LIABILITIES

Notes or accounts payable	$ 4,500
Original capital	10,000
Profit and loss	900
Total	$15,400
Sales for period	$ 5,400

In the two statements there is actual similarity in the character of the assets. There are the same items. On the liability side there is a new item "Notes and Accounts Payable." In the first instance the merchant had bought all his assets with his own capital. In the second he is using, temporarily, some outside capital as well as his own. Of the whole capital at use he is advancing $10,900, and his creditors $4,500. The ownership of these two capitals is different, but as long as his creditors have confidence in him the merchant uses both, with his own decision managing the entire capital. He has formed a sort of economic partnership and secured a temporary partner who is willing to invest in his business. Like some other examples used in this text, this may seem ridiculously simple. But too often errors in analytical judgment spring from lack of basic understanding, even as simple as this. Therefore, this kindergarten material is submitted for the careful reading of even the best trained analysts.

Quite frequently an analyst, in reading a statement by the comparative method, will label a statement as "topheavy with debt" simply because the dollar total of the debt is large in amount. Often mere size is mistaken for dangerous size and the analytical mind is appalled by what it feels certain must be an unsatisfactory condition. There is no accuracy of expression in such an estimate unless it be accompanied by some reasonable and accurate measure of the condition. Such a statement, assuming a debt of $1,000,000, prompts the counter question, "When is $1,000,000 big?" A sum of $1,000,000 is big to a man of moderate means and limited financial experience, but to a man of large means, a multimillionaire, with vast and wide financial experience it seems a much smaller item. All size is relative. One can imagine that a cat might look much larger to an ant than an elephant would to a horse. A debt is topheavy only when it is out of proportion to something else, not simply when it is large in dollars.

In the first part of this section a definite similarity of economic status was established as between net worth and debt. Both represent capital at use by an industry or merchant. The first is owned outright and the second is loaned temporarily by another owner who at any maturity may withdraw his willingness to remain an economic partner and ask the return of that capital which he has been lending. When any manufacturer or merchant has so built up the volume of his business that he must at all times use the capital of some one else to support that volume, he has taken the first step toward the so called "topheavy" condition. When the dislocation or disproportion has grown so great between net worth and debt that any important withdrawal of this outside capital would wreck the business, or when the fixed interest charge for its use becomes inordinately high, then the company or merchant is truly "topheavy with debt." Any certain amount of owned capital or net worth may support a reasonable borrowing, and this is a matter of proportion, not of the dollar total of the debt. When the balance or relation between the net worth and the debt falls below what is normal or usual within an industry, then it becomes quite proper to criticize as "topheavy" such a debt.

The peculiar thing in this connection is that most analysts probably have just this attitude, but it has remained largely a subconscious mental reservation. This lack of knowledge has led in many instances either to unfair criticism or to unsafe expansion. Good management may be allowed a weaker relation of net worth to debt than untried management. But unless this believed good management can earn sufficient to add enough net worth to relieve the dislocation, calm judgment of what was believed good must be revamped. A continuing bad proportion is a sure indication that management cannot earn itself into a position in which it will be able to provide the proper amount of working capital so as to relieve itself of an abnormal reliance upon outside capital for the purpose of securing all the capital it needs to support its operations.

It seems unreasonable to compute the current-ratio position and record its trend from period to period and relegate such an important matter as the capital-debt position to the limbo of the mental reservation. A low-current position has often been doctored up by a funding operation that seldom reduces and often raises the total debt. Too many credit analysts have been lulled into a false sense of increased security that has proven to be only a concealment of the real danger—too great a reliance on borrowings as a source of capital. To fund a current debt does not do anything but postpone the maturity. The capital so raised remains borrowed capital. It may leave as bad a dislocation between net worth and total debt, or it may bring about a worse condition. The analyst should reduce this relation between the ownership of the two capitals in use to a recordable figure and watch its movement up or down just as zealously as the current ratio. Such a record will protect him against too great a confidence after a funding operation or too long a continuance of an overheavy debt. Furthermore, it will substitute an accurate record for a series of temperamental mental reservations and make it possible to measure several companies each against the others so as to create a better appreciation of what is reasonable or safe. An accurate study of this proportion is probably just as important as a study of the current ratio proportion.

WORTH AND FIXED ASSETS

The fixed or noncurrent assets are often spoken of as capital assets. This phraseology is probably used because of the sound conception that owners' capital should generally be used in the purchase of such assets. They are the fabricating assets used in production or distribution, and in the liquidation of any business will generally bring but a fraction of their listed value. They are being consumed or worn out in the process of fabrication which brings them into the realm of the economic definition of capital. From the profit derived from the sale of the product, the owner derives funds with which to replace these assets when worn out. These profits are also in the nature of capital and until distributed are part of the net worth. The reasonableness of relating net worth and fixed assets is perfectly obvious.

In the case of fixed assets, as in the case of debt, we find it common to criticize in generalities. When the dollars invested in fixed assets appear large in volume the analyst is again too prone to say "overinvested in plant." A long discussion of this question is not at all necessary, as it follows largely the principles just discussed under the worth-to-debt relation. Any given net worth may be reasonably accompanied by a certain investment in fixed assets. When the net worth is too small in proportion to the amount invested in fixed assets, then we may say "overinvested in plant."

The net worth is the creditor's margin of protection against loss. Assets may shrink by the full amount of the net worth before the creditor loses. From the standpoint of the creditor it makes quite some difference as to how liquid this net worth is. If all of the net worth is invested in current assets, then the margin of protection is not only as shown in dollars, but those dollars are also quick dollars that will bring a high percentage of return in liquidation. If the margin of protection is invested in fixed assets entirely, then those dollars are slow dollars and the margin will be slow in liquidation and very likely subject to considerable shrinkage.

One of the reasons for being in business is to make profits. Many analysts rely too much on the net result shown in the profit-and-loss account being satisfied with the indication of profit-making. To such the making of profits is meeting the test for being in business. It is quite as important to observe how these profits are invested when retained in the business as increased net worth. If the net worth increases but does not retain its proportion to fixed assets, then plants or fixed assets are increasing more rapidly than net worth. In such an event the business is making capital, but is investing that capital in fixed assets in a greater proportion. While the breadth of the margin of creditor protection is increasing the margin is more confined to the slow dollars of poorly liquidating values and hence the quality as a protection is falling.

Therefore, it is suggested that a proportion be developed between net worth and fixed assets and recorded each statement date. If this ratio fall until it is abnormally low for that type of industry, then that company is "overinvested in plant." If it is falling, then that company may be operating at a profit, only to turn its capital more and more from a liquid into a fixed form. This ratio measures the quality of the margin and the reasonableness of plant investments.

PROPER PROPORTIONS

No set figure can be given as the proper one for any of these ratios. In a later chapter certain processes will be discussed by which the usual or expected proportion or figure may be discovered for the proportions of an industry.

SUMMARY

The following is a brief summing up of the ratios here discussed, indicating their method of computation, the result of the computation, and the interpretative meaning of the ratio. This brief synopsis is for those who may wish to review the general theories in brief exposition or who wish to have a reference sheet as a guide in departmental routine.

Current Ratio

Method of Derivation: To secure this ratio, divide the total of the current assets by the total of the current liabilities.

Result: The result indicates the dollars of current assets as offset for the dollars of current debt.

Principle Involved: The higher this ratio runs the freer the current assets are from debt claim by creditors and the more likely it is that creditors would receive prompt and complete payment upon demand.

Worth to Debt

Method of Derivation: To secure this ratio, divide the true net worth by the total debt, including both current and funded.

Result: The resulting ratio expresses the proportion existing between the capital owned by the subject and the capital loaned to it by creditors.

Principle Involved: The whole capital at use in supporting the operations of a company consists of its own net worth and that capital loaned to it more or less temporarily by its creditors, represented by debts. The proportion existing between the owned capital and that borrowed measures and records the debt pressure. The higher the ratio as here computed, the easier the debt pressure and the further removed from the criticism of being "top heavy with debt."

Worth to Fixed Assets

Method of Derivation: To secure this ratio, divide the true net worth by the amount of the noncurrent or fixed assets.

Result: The resulting ratio expresses the proportion between the owned capital and the money not currently invested.

Principle Involved: Plant or other noncurrent assets should be financed primarily from owned capital by the ordinary commercial enterprise. The higher this ratio is the more liquid is the net worth of the subject and consequently the more effective as a liquidating protection to creditors.

Merchandise to Receivables

Method of Derivation: To secure this ratio, divide the inventory total by the total of the trade accounts and notes receivable.

Result: The resulting ratio expresses the relationship between inventory, a cost item, and receivables, a selling price item, which together usually form the predominating factor in the total of current assets.

Principle Involved: The fluctuations of this ratio in a measure check the fluctuations of the current ratio due to the fact that sale of merchandise and transformation of inventory into receivables adds the equivalent of the profit on the sale to the asset side of the current ratio without any necessary addition to the liability side. It can also be used to indicate the preponderance of either merchandise or receivables in the current assets which makes a considerable analytical difference in estimating probable losses or profits due to inventory fluctuations in different phases of the business cycle.

NOTE.—The above condensed synopsis is reprinted from the literature of the Robert Morris Associates.

CHAPTER VIII

The Dynamic Ratios

In the preceding chapter the discussion centered on four ratios that can be developed from items or combinations of items on the actual balance sheet. These ratios are not indicative of motion, but of balance or proportion at one instant of time. For this reason they were called static. At this time the discussion will embrace a descriptive analysis of four ratios built up from sales in their relation to certain items on the balance sheet. These ratios are also four in number and as sales reflect the character of movement or force these ratios have been called dynamic. While not generally as important as the static ratios, they, in many instances, amplify the understanding of them or limit the reliance to be placed on them. Therefore their systematic development and understanding use is very important.

SALES AND MERCHANDISE

Simple comparative analysis has been accompanied by the use of certain critical phrases, two of which have already been mentioned and discussed. These two were "top-heavy with debt" and "overinvested in plant." A third such phrase is "overinventoried." The existence and use of this phrase as a critical expression of credit strength suggest that it should be analyzed and both its meaning and measurement carefully noted because too often it is merely a vague generalization rather than an accurate expression of a real condition.

The merchandise position must be considered in the full understanding of the economic situation. As the business cycle runs its course there is a period of reviving business activity when prices begin to advance. In this period the merchant with a substantial inventory already on hand will profit to an extent beyond his regular trading profit margin. During the time the merchandise is on his shelves, or in the shop of the manufacturer, the sales price will advance. As the merchandise was purchased on the lower price level and is sold on the higher price level the advance in price makes an added profit. When the apex of this price movement has been reached and demand slackens, accompanied by falling prices, the exact reverse happens. The merchant who at this point has a large inventory must reduce his prices in order to move it and suffers a loss from this lowering of values which cuts into or entirely wipes out his profit margin. It is, therefore, quite evident that the effect on credit position caused by an inventory, no matter what the size, varies greatly and in relation to the general condition of business in a large measure.

Business consists of manufacturing or buying merchandise to meet the demands of a buying public. Outside of plain speculation this is the reason for a merchant holding any inventory. There is a definite relation between merchandise and sales. The first is the base which supports the superstructure of sales activity. Normally, inventory consists of a large and varied number of separate articles. Some of these may be small and moderate in price and pass rapidly through the process of sale from merchant to buyer. Others may be of a much higher unit price and move more slowly. That merchant who can so select his inventory as to have available for his customers at all times a high percentage of their demands with a low percentage of such stock for which there is little demand, is the merchant who has a high executive ability. Such a merchant is imbued with a sense of the market and his stock of merchandise will be seasonable, in fashion, and truly a current asset. But this ability, or the lack of it, is not reflected in the dollar amount of the inventory. It rests rather in the relation of sales to the amount invested in inventory, representing merchandise awaiting sale.

Being overinventoried has a definite meaning as a matter of fact. It means that the inventory base for sales activity is too large in relation to the sales result or that sales are too small in their relation to the inventory carried. This may be more clearly seen by the use of figures. In previous sections assumptions have been made for the purpose of explanation and in this case it is assumed that there are two merchants in similar lines of business and located in the same community. They are, therefore, in very direct competition and their figures would be comparable. Both merchants succeed in doing the same amount of business, which for the sake of simplicity in mental arithmetic is assumed to be $1,000. The first merchant carries an inventory of $500 and the second one of $200. Under these conditions the sales of the first merchant will be twice his inventory, or in the ratio of 200 per cent. The sales of the second merchant will be five times his inventory, or in the ratio of 500 per cent. Relatively, the sales efficiency of the second merchant is two and one half times as great as that of the first merchant. He can sell at a lower margin of profit than the first and still make a larger profit because he keeps his inventory moving faster. From such a comparison the analyst can determine the relative overinventoried condition and also get some rather accurate idea of the capacity of the two men to sense the market. When the question of reasonable or typical trade ratios is discussed in a later chapter the full value of the relation of sales to inventories as a recordable indication of the merchandise position will become more evident.

This ratio of sales to merchandise is not to be confused as an attempt to establish a turnover of merchandise. Sales being computed on a cost plus basis and merchandise on a cost basis, a relation between the two cannot produce an accurate record of physical turnover. The upward movement of this ratio is a measure of greater rapidity of sale, therefore the fluctuations of the ratio may be correctly called comparable measures of merchandising rapidity or effectiveness.

In the normal course of business a successful merchant will find that he must have about so much merchandise, with certain variation in assortment, to meet the demands of his customers for goods. In buying this supply of merchandise the merchant becomes subject to the possible advantages of price advance or to the dangers of price decline as just discussed. If his supply of merchandise is reasonably normal or within the demands of his customers for the period, such possible extra profits or extraordinary losses are a regular hazard of merchandising. But when a merchant buys an amount in excess of his usual needs based on his expectation of a rise in prices and with the hope and intention of making an extra profit on the goods held over into the next season, then there is a true condition of being overinventoried on the basis of inventory speculation. Such a surplus of merchandise will dislocate the sales relation to inventory by decreasing the ratio so that the analyst with some knowledge of the proper ratio is put on notice of the condition and should be able to take precautionary steps for his protection.

The writers remember an incident having an exact bearing on this point. In 1917 they were asked to check on the name of a company, not a customer. Fortunately it was possible to secure a statement and a memorandum of sales. In general the statement was well proportioned and with a satisfactory, even if a trifle low, current ratio. The one outstanding disproportion was that of sales to merchandise, which was very much below the expectation. This seemed to indicate an excessive inventory and this feeling was further strengthened by the merchandise to receivables ratio, which was somewhat too high to be acceptable. When questioned about the inventory the management admitted that in certain staple lines enough merchandise had been bought to meet the normal sales requirements for two years. This had been done in the belief that war conditions would cause a heavy demand for the basic materials of this merchandise and therefore create a strong price rise. As a matter of fact, the speculative judgment of the management seemed to be justified, as events were bringing about just the advances anticipated. As an opinion, given at that time, the writers checked the name as being temporarily prosperous and good, but suggested that any continuation of this good checking would at any future time be dependent almost entirely on the then possible speculative tendencies of the management and market conditions. In something less than two years this same company became seriously embarrassed because the management guessed incorrectly concerning the end of the war and was caught with an excessive inventory on a falling price market. Whenever the ratio of sales to merchandise is too far below a proper relationship, then the analyst must look out for speculative tendencies or perhaps an accumulation of ancient merchandise. In either event there are certain dangers of loss through necessary price adjustments that must be weighed and balanced.

Bank credit executives have so long registered the current ratio as the measure of strength that any intelligent business executive knows what is expected of him, 2 for 1 or better. The banks having very largely created a demand for this kind of statement, it is but natural that the business man has tried to supply the demand. Sometimes these efforts to create an acceptable current ratio may be discovered by the movement of this ratio of sales to merchandise. Only a few years ago the writers were asked by a banker friend to prepare an analysis from the figure facts on a certain risk. The current ratio stood at about 240 per cent, or "2.4 to 1," and the other ratios and general proportions were fairly reasonable. There was, however, one distinct dislocation. The ratio of sales to merchandise was a little over 1,200 per cent when it seemed reasonable for this ratio to be around 600 to 800 per cent. This disproportionately high ratio resulted in asking the merchant how it was possible for him to support such a large volume of business on such a small inventory. The answer was interesting because he was honest and perfectly frank. During the whole month of December no merchandise was bought, nor were any real commitments made for later purchase. Fabrication, however, continued at peak production, sharp end of the year collections were forced as far as possible, and all intake was used to reduce bank loans and commercial debts. Inventories as a result of this practice were reduced to around $400,000, but almost immediately after January 1 they had to be replenished very rapidly and by January 10 amounted to about $900,000. When the December 31 statement was recast to this larger inventory basis with a similar increase in current debts, the current ratio was considerably below 200 per cent and the sales and merchandise in a much closer relationship to usual proportions. This was a case of honest window dressing in order to give to the banker a current ratio that would engender in him a feeling of confidence. Within reasonable limits the higher relationship that the ratio sales maintain to merchandise, the greater the likelihood of seasonable merchandise free from the speculative risk of price-level changes, but when this ratio rises beyond the reasonable limits the more likely it is that window dressing has taken place. Under these theories the movement of this ratio has upper and lower limits of strength indication, and beyond these movements the analyst should be prompted to investigate the merchandise situation, casting aside his reliance on the current ratio until he is certain that the inventory is truly current and not a cause for immediate borrowing.

Modern accuracy of expression and measurement should prompt any conscientious credit analyst to substitute the computed and recordable relation of sales to merchandise for a mental reservation of "overinventoried" that expresses no degree of divergence from usual and cannot produce recorded measure.

SALES AND RECEIVABLES

To understand this ratio it is necessary to understand just what receivables are. An expressive description of them might say that receivables are sales sediment. A company doing only a cash sales business would have no receivables. Sales would turn merchandise directly into funds which could be used in the payment of debts. But in this credit system of ours the end of any selling period finds most businesses with a certain amount of the sales for the period yet uncollected, remaining as a lag or sediment in the fluid of sales. They represent the credit extensions made and carried by the company in order to get the market for its sales.

The business of commercial enterprise technically is that of production and distribution, not financing. This latter process is within the realm of banking. Common selling practice carries certain terms, so that any volume of sales will be accompanied by a usual or customary lag in complete collection which leaves receivables on the books, yet to be collected. As long as this sediment is not greater than is usual in an industry, any single company is but meeting trade conditions. But when the relation of sales to receivables falls below the usual, then the purchasers from that company are slower in making payments than is customary. This usually means an added expense of financing, because the selling company has to use more capital to carry these accounts. It also means a greater danger of inferiority of final collectivity, greater credit losses, and an all-around poorer quality of receivables.

On the other hand, too high a relation of sales to receivables may have a significance that would not be so readily noted by considering merely the dollar listing of receivables on the statement. As the lag in collection of sales leaves a reasonable or usual amount of receivables, so one might expect the converse. Within any industry any specific sales volume in dollars should leave behind it a usual amount of receivables. When this is not the case the analyst should most certainly check deeply to ascertain how such a high ratio of sales to receivables is possible. Direct questioning or investigation may disclose the fact that the management of the subject may be only good collectors or salesmen of great ability who can get their market on shorter terms, either by persuasion or by quality of product and service. But it may also disclose the fact that the subject, not being in a position to borrow what its management needs for its capital at use, has resorted to the expedient of selling its receivables to a finance company, and has neglected to report the contingent liability.

This ratio, sales to receivables, works in a manner very similar to the ratio of sales to merchandise. The lower it is the poorer the quality of the receivables will be. The higher it is, within the limits of the usual, the better the receivables will be. But when it passes far beyond the upper usual range for such a company the more important it is to be certain that the relationship is real and fundamentally sound and not an empty shell of appearance covering an unsound and ordinarily unrecognized core of manipulation.

SALES AND NET WORTH

In the consideration of this ratio we again come to a common phrase of criticism—"overtrading." A great many companies have been accused of overtrading and in all too many cases the criticism has again been rhetorical and not accompanied by any accurate computation or degree of measurement for recording purposes. What, after all, is "overtrading"? It might be described in a number of ways, but the most logical would seem to be a condition in which any company was attempting to finance a volume of business too great in comparison to its own capital. While generally accompanied by excessive borrowing, in order to secure a sufficient capital at use, this is not always the case. A company may rely on velocity to get through an overtrading condition. It may sell its merchandise on a very thin margin to move it rapidly. It may offer rather extraordinary discounts to spur rapid collections. By a combination of these two processes it may build up a very much larger volume of business in relation to its own capital, or net worth, than is usual. In such a condition any slowing-up process that retards sale or collection might very quickly make it absolutely necessary to secure more capital at use to save the situation. Whenever the ratio of sales to net worth goes much beyond a reasonable relationship there is always the danger of overtrading. The careful analyst, finding this ratio higher than his conception of usual, would do well to study carefully the ratios of sales to merchandise and sales to receivables and the potential effect of a slowing-up process that might necessitate emergency borrowing.

Companies are sometimes accused or criticized as "dying of dry rot." This again is a rhetorical expression of a condition for which recordable data could be substituted. Capital to be properly employed must have a reasonable resultant or related sales volume. If the ratio of sales to net worth is far below the usual, then the capital of the enterprise is stagnant and commercially inactive in a degree that as the ratio goes down may end in absolute loss of market and oblivion.

In either event a recording of the absolute relation of sales to net worth in a figure or percentage, the change of which can be noted from year to year, is a far more accurate credit method than the utterance of unrecordable phrases. This record will give a history of changed proportions that will relate a present to a past condition more accurately and more forcibly than the common reliance on mental reservations, inspiration, or reliance on that subconscious thing, the credit sense.

SALES AND FIXED ASSETS

In the preceding chapter the question of being overinvested in plant was discussed in relation to capital. Net worth was related to the total of fixed assets, as these assets are of the nature of capital assets which normally should be purchased from owned capital. But there is another aspect from which we can consider fixed assets. These are the productive assets that are owned to further production or distribution. From this viewpoint they are very definitely related to sales. Every dollar that is invested in fabricating assets or noncurrent assets can be justified only if that investment results in a sales volume that will be reasonably productive. In building or enlarging a plant or in purchasing other noncurrent assets owned capital is diverted from current assets, with certain allowances for funding operations. As capital so invested returns to the business in liquid form only as the result of profits from sales, it is evident that unless sales result the investment is unsound and illogical.

In the competition for markets, management often strives blindly for volume. This is frequently more noticeable during the price-rising period of the business cycle. At times of great demand for goods, production stampedes industry into plant expansion to get volume. Hence volume or sales figures often show increases, even with price adjustments, but when related to fixed assets the ratio goes down. Greater production has been secured by investing in more units of production, but the per unit production result has fallen. The net result is more capital investment to lie idle at the next depression and the increased volume has been achieved with increased inefficiency. This measure of the production results of capital, as expressed in the relation of sales to fixed assets, is a fairly accurate measure of the economic soundness of such an investment.

When the net worth to fixed asset ratio is found to be falling, accompanied by a falling ratio of sales to fixed assets, then liquid capital is being transformed into fixed capital faster than new liquid capital is being added to the net worth, and this investment is, therefore, relatively less productive. When this condition is accompanied by a falling net worth to debt ratio the vicious circle is complete, quite beside the fact that both net worth and sales may be increasing.

SUPPLEMENTARY RATIOS

The eight ratios discussed in this and the preceding chapter are the main ratios advocated for regular compilation and recording as substitutes for mental reservation and a reliance on the so-called credit sense. This last, after all, is nothing more than the subconscious reaction of the mind along these very same lines. With the possible exception of the merchandise to receivables ratio, the use of which is largely personal with the writers, all of these ratios are nothing but ordinary credit reactions. There is nothing in ratio analysis that savors of necromancy. The only difference between it and the mental processes of the analyst of experience lies in the reduction of the various proportions to figures and then recording them for comparative use, so that changes in proportions can be noted readily from statement to statement. To this is added the somewhat practical fact that the ratios can be prepared by a moderate-priced clerk to save time and effort for the higher-priced executive. After a statement has been spread on a comparison sheet, three minutes' time with a computing machine by an average clerk will produce these ratios in recorded form, so that the higher executive will have at all times before him a history of proportions that will carry him back almost instantly over the whole history of the risk.

In addition to these ratios there are a number of supplementary ratios. These are not as needful of regular development, but in many cases are highly instructive. On account of their supplementary nature they will be discussed by themselves and form the body of the next chapter.

SYNOPSIS OF VELOCITY RATIOS

Sales to Receivables

Method of Derivation: To secure this ratio, divide the net annual sales by the total of the trade accounts and bills receivable.

Result: The resulting ratio expresses the relationship between the total annual business and the outstanding receivables, which are the uncollected sales for the period.

Principle Involved: The larger the sales are in comparison with the receivables the more nearly the subject has approached to a complete collection for the period and the greater the probable liquidity of the receivables. Conversely, the lower this ratio the greater the probability of the presence of poor collection methods and stale receivables. Note, however, that an unusually high relationship may mean the hypothecation or sale of receivables. This is more probably the case when this ratio and the "merchandise to receivables" ratio are both badly distorted when compared with common or average industry proportions.

Sales to Merchandise

Method of Derivation: To secure this ratio, divide the net annual sales by the total merchandise inventory.

Result: The resulting ratio expresses the proportion between sales and merchandises which, while not a definite physical turnover indicator, is a comparable measure of turnover from year to year.

Principle Involved: Merchandising capacity can be measured, within reasonable bounds, by the sales developed per unit of inventory. The higher the relationship of sales to inventory, the greater is this merchandising capacity and the more probable the freshness, salability, and liquidating value of that inventory.

SALES TO FIXED ASSETS

Method of Derivation: To secure this ratio, divide the net annual sales by the total of the amount of the noncurrent or fixed assets.

Result: The result indicates the sales productivity of fixed assets expressed by the relation of sales to the money invested in fabricating, trading or nonliquid assets.

Principles Involved: Capital is invested in plants and their contingent fixed assets for the purpose of production or trading. The justification for this investment is based on achieving a proportional sales volume. As the relation of sales to fixed assets increases we are more likely to find a condition in which plant investment is increasingly justified and profitable.

SALES TO NET WORTH

Method of Derivation: To secure this ratio, divide the net annual sales by the true net worth.

Result: The result reflects the sales activity of the invested capital.

Principle Involved: Capital is invested in any enterprise in the hope of a substantial return. The probability of such a return is largely dependent upon a reasonable activity of the investment. The proportion borne by sales to net worth establishes a measure of this activity. When the relation of sales to net worth is an increasing one from year to year, we can feel reasonably assured that the invested funds are more actively and probably more profitably employed unless this relation rises so high as to indicate overtrading. An exception to this general deduction should be noted where a company is striving for volume irrespective of profits and where the increased proportion may be due to a decline in net worth instead of a healthy increase in sales.

NOTE.—The above synopsis is reprinted from the literature of the Robert Morris Associates.

CHAPTER IX

Supplementary Ratios

In the preceding two chapters, the value of proportion has been established and eight different ratios discussed under the two general headings of static and dynamic ratios. The seven additional ratios to the original current ratio are tests which should be made in examining a statement from an analytical point of view. These eight ratios are considered most important and readily obtained from data generally submitted. While it is not always the practice to divulge profit and loss or sales figures, it is becoming more universal as bankers are educated to the value of this data, and are insisting that it be furnished to them.

While it is thought that these eight ratios give the analyst a far better estimate of the company than a reliance on the current position alone, there are several additional computations that may be made which explain or further emphasize conclusions reached.

These additional tests are as follows:

1. Net profit to sales.
2. Net profit to net worth.
3. Cash and receivables to current debt.
4. Net worth and funded debt to fixed assets.
5. Funded debt to fixed assets.
6. Working capital to inventory.
7. Raw material and finished goods to goods in process.
8. Working capital to total assets.

There are a number of other ratios developed by present-day writers on analysis, but inasmuch as most of them can be obtained either from the 100 per cent statement or are covered sufficiently in the ratios already explained, no additional comment will be made here. It is sufficient to say that nearly every book on the subject of Financial Statements has some reference to this ratio method of analysis. It is, therefore, only in an effort not to be too arbitrary in establishing only eight proportions that the eight additional ratios are given.

MEANING OF NET PROFITS AS USED IN THE NET PROFIT TO SALES AND NET PROFIT TO NET WORTH RATIOS

It seems well at this point to define the account "net profits" as it will be used in this discussion. There has been a considerable hesitancy on the part of the writers to include net profit figures in a series of ratios for several reasons.

1. Due to the exceedingly high tax rates that prevailed during and immediately after the war, and to a great extent still prevail, it is thought that many companies control the amount of profits made for any fiscal period, in order that they may not have to pay high taxes. Everyone has heard of statements being made, one for the banker, one for the stockholder, and one for the government. This understating of profit has been accomplished quite often by the juggling of inventories, but no matter in what way it is accomplished, the profit figures are not considered sufficiently accurate or uniform in computation for ratio work.

2. It is not clear in the minds of analysts just what is meant by net profit. In some instances the figure is reported before dividends and taxes are taken out, while in other instances either one or the other may have been excluded. There must be some uniformity of nomenclature before any definite ratios can be developed.

3. It is difficult to determine how to handle a loss in the development of any index number. This difficulty cannot be so easily understood at this time because the explanation of the index number follows in a later chapter. However, it can be understood that a loss will give a minus ratio,

which immediately influences any index number if included in ratios and reduces the parity point by the weight allowed for the ratio (see Chapter X).

For the use made of net profits in this volume the following explanation is in order. The net-profit figure should be the profit remaining after all costs and expenses have been met, which includes dividends, depreciation, and taxes. Additional income from rents or interest should be added, but any additions or subtractions not resulting from current operations should be excluded. There are occasionally excessive charge-offs or unexpected collections that are entered against the current profit-and-loss-statement. These should be entered against surplus and a satisfactory reconcilement be made from one year to another. The net profit is then the profit from operation after all costs and expenses, depreciation, taxes, and dividends have been met. Taxes are a cost of doing business, and, although only estimated, can be very closely approximated; it is certain that they must be paid, so they are a deduction. Depreciation is also an expense of doing business, and while only estimated, the charges against profit and loss for depreciation are as accurate as accountants can compute them. The writers have taken the attitude that the stockholders are entitled to a reasonable return if earned on their investment and that dividends are therefore normally a practical expense of operation in that this amount will not be left in the business. Dividends being an expense of operation, the return on invested capital should be measured after deducting the return to stockholders. Another argument in favor of computing the ratio net of dividends is that the data for computing this ratio are likely to be more comparable. It is very much the same argument as that advanced in handling fixed assets net of reserves. If the reserves are given on the liability side, they can be deducted from the fixed assets and can be compared with the companies giving fixed assets net. This places all data on the same basis. It is, however, impossible to estimate the reserve. The same is true in the case of dividends except that the amount of the dividend is not always given, as is the case with reserves.

Perhaps the majority of analysts and accountants do not follow this plan of deducting dividends prior to determining the net-profit figure. Quite correctly they state that dividends are profits and therefore should be retained in the net-profit figure. This reasoning has every appearance of being logical, but it overlooks one highly important credit aspect. We have been at some pains to establish the fact that the net worth is the owner's capital protection to the creditors'. This, whatever its amount may be, is the first buffer between shrinkage in the value of assets and loss to creditors. Profits earned and spent through dividends add nothing tangible to the protection of creditors. If any company disburse all of its net earnings, and some disburse more for several years, the net worth does not increase. From the standpoint of creditor protection the figure of interest is not what might have been added to net worth, but what actually was added through earnings.

It is true that certain allowances for earning power must be made. If this problem be viewed in the light of figures, it becomes more distinct. Let the assumption be that there are two comparable companies, showing net earnings before dividends of $10,000 and $5,000, respectively. The first company declares an $8,000 dividend and the second a $3,000 dividend. Each adds $2,000 to net worth. If we go to the extreme of supposition and assume that both have the same debts, sales, and net worth, then by using the $2,000 figure the analyst might arrive at a misconception of their relative strength. Each adds the same amount to net worth; the net profits and sales would bear the same relationship. This possible similarity obstructs the view of some and condemns the deduction of dividends before developing net profits.

Some further examination is obviously necessary. The first company, to begin with, has disbursed 80 per cent of its earnings; the second only 60 per cent. While not so great an earner, the second company is content with lesser participation in benefits for its stockholders and adds a greater proportion of its earnings to the protection of creditors. This certainly is a point in favor of the second company from the standpoint of the creditor that would be minimized or overlooked entirely if the earnings before dividends were compared.

Furthermore, a dividend policy having been established is not easily changed. When a given rate of dividend has been in force for a period, it becomes nearly as fixed a charge for capital as interest. Instance after instance can be recalled in which companies have continued to pay the established dividend, partly out of undivided profits when annual earnings are deficient, so as not to disturb capital and the sleepy credit analyst.

Having made profits in the past is no insurance of future profit-making and hence the writers in their analytical work prefer to take the conservative position of considering as net profits only that which is left as an addition to net worth. It seems safer to deduce possible earning power from this position by special reservation than to take as net profits the net earnings before dividends and make allowances toward conservatism. It seems safer to start at conservatism and make allowances toward liberalism.

I.—NET PROFITS TO SALES

Volume of business done or the volume of profits in dollars is only a superficial test of efficient or profitable operation. It is the relation of these profits to the total business done, as measured by the sales figure, that partly determines the profitableness of the operation. The relation of profit to sales varies in different lines of industry. In the meat-packing business the percentage relationship is very low, running from 1.3 to 1.5 per cent on sales, while the profit to sales relationship in the jewelry line runs much higher. This difference is made up by the number of times receivables, merchandise, and net worth are turned in the meat-packing industry as compared with the jewelry. This presupposes a knowledge on the part of the analyst of what is reasonable to expect in each line of business.

This reasonable proportion of net profit to sales will vary over a period of years according to the upward and downward swings of business generally, but there is no better test of profitable operation than this ratio. If a satisfactory showing is not maintained, a curtailment of business may wipe out profits, and quite naturally the nearer this ratio approaches zero the less profitable the operation of the company becomes.

In the competition for markets a merchant may shave his margin exceedingly thin. This may bring him trade and show a fair volume of profits in dollars and a large or even a commanding volume of business. It may so stimulate his selling as to lead to overtrading. When this overtrading is on a narrow margin of profit it is doubly dangerous.

II.—NET PROFITS TO NET WORTH

The amount invested in a company by its stockholders, commonly known as capital or net worth, is entitled to a reasonable return. This reasonable return or prospect for such a return is what attracts capital to any enterprise. Again it is the percentage relationship that the profits bear to the net worth rather than the dollar amounts which measure the return. As stated earlier in this chapter, the banker is primarily interested in the amount of net profits which are left in the business after dividends, taxes, and depreciation have been deducted. The sooner this is understood the better for all concerned. Anyone becoming a partner in a business through the purchase of stock is entitled to a reasonable return on his participation. It is understood that such a return is not always received, but this is the chance any partner takes in engaging in a business. This suggests a most careful study of a person's ownership of stock in order to get a return to which he is rightly entitled.

The credit man has the interest of his customers at heart, but must at the same time safeguard his loans. To that end, the money left in the business further strengthens the net worth position and, assuming no offsetting borrowing has taken place, makes his loan more secure.

Upon failure to earn a reasonable amount on invested capital, stockholders are likely to become restive and require a change in executive management which in turn would reflect directly on the credit risk.

III.—CASH AND RECEIVABLES TO CURRENT DEBT

This ratio, often called the acid-test ratio, was discussed in some detail in Chapter V, so no additional comments will be made in this chapter, except that in certain cases it is well to compute and record it.

IV.—NET WORTH AND FUNDED DEBT TO FIXED ASSETS

In this ratio the fixed assets are, of course, taken gross. It is a test of plant expansion and should be used in connection with the worth to fixed ratio. The ratio indicates how much of the stockholders' and bondholders' money is left after supplying the fixed assets. In all computations involving fixed assets the grouping is made according to the explanation in the earlier chapters. The writers in using the fixed-asset item do not make any deduction for depreciation reserves. The two methods of handling reserves introduced in Chapter IV were given for those who might benefit by both viewpoints.

V.—FUNDED DEBT TO FIXED ASSETS

An additional test for plant expansion is the funded debt to fixed asset ratio. There are often instances where a company has funded part of its current obligations. This is often followed by plant expansion and further mortgaging up to a point where the mortgage becomes a substantial percentage of the fabricating assets. The only way for such a company to obtain additional funds would be through the issue of additional stock, or by the assessment of the old stockholders. Therefore, the extent to which the fixed assets are mortgaged as measured by this ratio determines the future possible borrowing power through mortgage bonds. A company having only a fair current ratio, a worth debt ratio of about 100 per cent and a high percentage of funded debt to fixed assets could only obtain additional funds by stock subscriptions. It has been the observation of the writers that such a condition has often arisen from too liberal dividend payments. If a crisis arises, the stockholders should be called upon for at least the return of the dividend payments.

When the proportion of funded debt to fixed assets rises abnormally high, there is a danger of the debt becoming a residuary claim on the current assets. With highly specialized plants, the sale of which might be difficult, a high relation of funded debt might be exceedingly dangerous.

The following 100 per cent statements of a single company and the group in which it operates with the ratios illustrates the point quite clearly:

The individual company had a poor current ratio the first year, so it funded the debt as shown on the second statement by the increase from 8.28 to 28.38. The last two years show a substantial increase in current liabilities which accounts for the increase in total debt, the funded having remained about the same. The company's worth-debt ratio has also declined the last year, falling far below parity.

	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Total current	49.86	57.27	49.94	50.55	46.58	49.01	47.37	47.92	51.68	47.39
Total fixed...	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total....	100	100	100	100	100	100	100	100	100	100
Total current	34.04	22.09	14.91	15.31	9.96	15.50	12.61	13.36	22.44	12.44
Funded debt	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Total debt	42.32	48.75	43.29	42.13	40.44	42.99	41.20	39.27	50.48	38.82
Reserves.....	9.82	1.59	11.50	1.80	10.99	1.76	11.48	1.56	12.73	1.69
Net worth....	47.86	49.66	45.21	56.07	48.57	55.25	47.32	59.17	36.79	59.49
Total......	100	100	100	100	100	100	100	100	100	100
Ratios										
Current......	146	233	335	298	467	274	375	321	230	265
Worth—fixed.	95	136	90	119	91	128	90	124	76	125
Worth—debt.	113	106	104	148	120	145	115	194	73	165
Funded debt to fixed assets........	16	62	56	54	57	54	54	49	58	50

The next set of ratios—Funded Debt to Fixed Assets—shows to what extent the fixed assets are mortgaged. The last year shows the company at its worst. The company has mortgaged its fixed assets 58 per cent of the value, while the group only 50 per cent. It means that the company will not be able to improve its falling current position by a repetition of its previous means of obtaining funds, but will have to rely on additional capital either in the nature of new stock or in an assessment on the old stock. This ratio can well be added as a supplementary test to the fixed asset ratios.

The condition of a company having a thin current ratio but a large asset item of effective plant or real estate with no funded debt is quite different from one with both a thin current ratio and a high proportion of mortgage against fixed assets. Fixed Assets are coming to be recognized as a good secondary defense against a low-current position by the amount of their liquidating realizable value. This ratio should be used in any case of a low-current ratio in order to determine the probability of this secondary support.

VI.—WORKING CAPITAL TO INVENTORY

The working capital as defined in an earlier chapter is the excess of current assets over current liabilities. The ratio under discussion here measures the percentage of working capital that depends on inventory as a liquidating element. It is a corollary to the acid-test ratio, and may be used in conjunction with the current ratio to measure the amount of working capital tied up in inventory.

The importance of the inventory and its proper proportion to other items on the statement cannot be overstressed. Its liquidity, balance and correct cyclical ~~possession~~ are factors that reflect efficient executive management in the property statement and profit-and-loss account.

Every concern should have a comfortable excess of current assets over current liabilities or working capital with which to carry on the current operation of the business. A ratio of working capital to inventory determines the sufficiency of the current ratio. As a general proposition a company having a 200 per cent current ratio, but with a large percentage tied up in inventory, is speculating in merchandise. This observation, of course, cannot be applied to chain stores and others doing a cash business. A low ratio of working capital to inventory indicates this tying up of the working capital in inventory speculation. If prices go up such speculation will be justified by additional profits, but this speculation does not usually come at the bottom of a business cycle, but rather when business is booming. A fall in prices during such speculation will have a weakening effect on the current position.

With the appraisal of the working-capital position, in relation to the inventory are such factors as the nature of the merchandise sold, possibility of hedging, purchases or sales of futures, and the cycle which has already been mentioned. It is for these reasons that any ratio involving the inventory item bears rather careful examination. It is also the item most used to window-dress a statement and, therefore, subjecting it to as many tests as possible may assist in uncovering such efforts of window dressing.

VII.—RAW MATERIAL AND FINISHED GOODS TO GOODS IN PROCESS

The use of this ratio is somewhat abstract, but it is inserted as an interesting side light on the inventory situation from a liquidating viewpoint.

Inventory in a raw-material state, is salable in the raw-material market at approximately its purchase price, providing, of course, it is more or less standard merchandise. Finished goods may be sold to either customers or the trade. This is not true of goods in process. This part of the inventory must either be junked or additional expense incurred to put it into the finished state when it can be sold to the trade. While these remarks apply to a manufacturing concern only, it is nevertheless thought that such a test might prove interesting and valuable in many instances.

This is in a way related to the question of balanced inventory, but is also a proportional study of secondary importance.

VIII.—WORKING CAPITAL TO TOTAL ASSETS

A great many writers on statement analysis use this ratio as one of the most important ratios to measure the liquidity of the working capital. It shows how much of the total assets are free for the current operations of the business. This ratio can readily be computed by deducting the current debt from the current assets on the 100 per cent statement as explained in Chapter VI, the result of the subtraction being the percentage that the working capital bears to the total assets.

CHAPTER X

Indexing Credit Strength

In the preceding three chapters discussion has centered on a series of ratios which express various indications of credit strength or weakness. These ratios follow logically the development and use of the current ratio. In a large measure they are simply a reduction to a recordable figure of the mental reactions which occur in the minds of every analyst. Modern accuracy of expression calls for something more definite than vague criticism. Furthermore, progressive credit methods demand an easily read record which will recall to the mind of the analyst all changes in the proportion of statement figures rapidly and completely over the whole antecedent history of the case. When the main ratios are regularly computed and recorded they visualize the mental reservations generally made, and it becomes possible, at a glance, to recreate the mental attitude for each year without mental computation for each separate year.

The development of this idea has received a slow acceptance, although a steady one. In the last three years the rate of acceptance has been much more rapid. There have been two main objections raised against this method of analysis. The first and less important is the element of time and consequent cost. This objection comes for the most part from those who have not attempted to use the method and "believe" it might work out in special cases, but that it would be cumbersome and expensive for general use. When it is known that the eight principal ratios can be computed accurately by a reasonably competent girl, drawing a salary of perhaps one hundred dollars a month, in something less than three minutes per statement, the cost objection explodes.

The second objection is somewhat harder to answer. Realizing the complexity of the process of forming a credit judgment, some credit executives state that the general introduction of ratios simply adds complexity to an already complex problem. This objection comes mainly from such men as have already built for themselves a credit background and developed a subconscious mental activity that performs in an inspirational way those things which the ratios register. Undoubtedly there were conscientious objectors some thirty years ago when the formal spreading of successive statements on comparison sheets began. A little later there was probably an objection raised to recording the current ratio, as requiring additional clerical work, expense, and, after all, not expressing anything of much value. From this period credit granting is advancing through a complete, almost too complete, ~~an~~ acceptance of the value of the current ratio toward a greater development of analytical method. The whole body of credit men are attempting to create a credit science. And still the objectors to the enlargement of recorded data as a substitute for hunch are afraid of complexity. It is not enough to state that some familiarity with ratios will relieve them of this criticism. One cannot meet the criticism by calling attention to the fact that these ratios express conditions such as "top-heavy with debt," "overinventoried," and other phrases accurately and in such a way that their relative improvements or declines can be seen readily. Some method must be found by which the net result of the individual movements of the several ratios can be reduced to one recordable indicator or index number, so that the analyst can have the changes of credit strength put before him with the pluses and minuses offset.

RATIO VALUES

It is evident that the eight ratios most generally used are not equally important. Some of them indicate proportions that are far more indicative than others. This relation of values may vary as between analysts even when they have accepted the general theory of ratio analysis. Therefore any attempt at expressing this relation of values is almost entirely personal and the weighting of the analytical value of the current ratio and the sales to merchandise ratio, for example, can be only arbitrary. Each separate analyst must of necessity select for himself the importance which he will attach to any ratio. Hence the authors can outline merely what they have come to believe is a rational and fair average relation of values as between the several ratios.

In assigning relation values to ratios the current ratio comes up for first consideration. That it has a great importance is not to be questioned. But how great this importance is in comparison with the other ratios is a matter of opinion. The current position reflects the ease-of-payment position at the date of the statement. But current positions are shadowed by the debt position. Frequently a current debt is funded to ease a tight current ratio. But, as has been said, a current ratio of 200 per cent with no funded debt is quite a different matter from a 200 per cent current ratio with a substantial funded debt. A projection of the total debt position is highly important for two reasons. First current debt funded is no less borrowed capital and the payment obligation is simply deferred and not relieved. Therefore, the ratio of worth to debt is important. Secondly, when funding of current debt occurs it will give a false sense of security unless the overhanging final payment necessity of this debt is kept in the analytical picture. Quite recently a large corporation, being in a tight current position, went through this funding operation and secured thereby more working capital. It still remains to be seen whether the company can earn its way out during the respite of the funding period so that when the day of payment comes it can pay. Therefore, these two ratios are closely bound together and serve as checks against each other. It is as important to be properly financed, with sufficient net-worth control of the capital at use, as it is to be in a position of apparent current ratio liquidity. This is more necessary in our modern mixed methods of financing when debenture bonds, apparently funded, may have requirements as to the maintenance of definite current proportions, failure to do so causing them to become currently payable.

The writers feel that on the average the current ratio and the worth-to-debt ratio have equal analytical values. So many instances have been noticed in which the worth-to-debt ratio has raised the first suspicion of weakness that it often seems the preference for importance should be given to the worth-to-debt ratio if given to either. Analysts have so long placed their main reliance on the current ratio that such a suggestion would probably not be accepted. Therefore, they are given equal value.

The next question is how to express this valuation or relation of values. For statistical handling a percentage method has been adopted. The assumption is that the whole analytical value of all of the ratios combined be considered as 100 per cent. The writers believe that, on the average, one-half of the analytical value of all the ratios lies in the current ratio and the worth-to-debt ratio. These two ratios are certainly the most important tests. In some peculiar instances giving them half the whole value may be placing too great an importance on them, but on the average and through numerous tests this assumption of value has worked out satisfactorily in actual application. If, then, these two ratios together equal 50 per cent of the analytical value of all the ratios and if each is equal to the other, then their individual relation to the value of all the ratios is 25 per cent each.

The effect of investing capital in noncurrent assets is to render the owned capital less liquid. It is really a transformation of the creditors' factor of safety into another form, one that generally is realized upon less readily in liquidation and usually at a heavy depreciation. In winding up the affairs of any company the relation between net worth and that part of it which is invested in fixed assets is important, because the shrinkage will probably be the highest. As has been stated in discussing this ratio and several supplementary ratios, there are variations to be considered. When part of the cost of fixed assets is borne by funding operation the net worth has, in a measure, been relieved from this strain. The effect of this method is reflected by the worth-to-debt ratio. But even when fixed assets are financed in a degree by funding operations, there remains the possibility of net worth having to absorb this financing at any funded debt maturity. Therefore, even when supported by funded debt, the amount invested in fixed assets in its relation to net worth is a test of fundamental credit strength.

The value relation of this ratio to the two ratios just previously discussed, current ratio and worth-to-debt ratio, is again a matter of individual decision. The writers have formed the opinion that, on the average, this ratio is about 60 per cent as important as either the current ratio or the worth-to-debt ratio. Having assumed that these ratios are each worthy of a 25 per cent rating as against the value of all the ratios, and that the worth to fixed ratio is only 60 per cent as important, we arrive at 15 per cent as the relation of value for the worth to fixed ratio as compared to the whole value of all the ratios. Where there is an investment in fixed assets of any considerable amount this 15 per cent is believed to be a reasonable and workable valuation or weighting. In specific instances, when the fixed asset investment is small, this weighting may logically be reduced, and in some cases the ratio may be practically so valueless as to be worthy of no weighting at all. The method of handling such a condition will be considered later and indicated in certain sample analyses.

Three of the sales ratios are of approximately equal importance and for practical purposes in developing an index may be handled as definitely equal. These are the ratios of sales to receivables, sales to merchandise, and sales to fixed assets. The value relation of each of these ratios to the whole value of all the ratios is probably somewhat less than the net worth to fixed assets. The writers, in their several analyses, usually assign a value of 10 per cent to each of these ratios. In practical tests this scale has been found to produce sound and conservative results.

The sales to worth ratio measures a minor proportion and its value can hardly be more than one-fifth the value of the current ratio. As in the worth to fixed ratio there are times when this ratio must be withdrawn from the index entirely. But in the main a 5 per cent relation in value, or weight, works out very satisfactorily both as an indicator and as a stabilizer.

The merchandise to receivables ratio is not used in connection with an index because of its necessary inversion at times. It changes as a measure of underlying strength, at different times in the business cycle. This is the topsy-turvy ratio that requires close supervision of the analyst and is interpretive as a single proportion rather than as a general relation to the other ratios.

INDEX WEIGHT SCALE

The following tabulation expresses the relation values of each ratio to the whole value of all the ratios as generally used by the writers.

Ratio	Relative value or weight
Current ratio	25%
Worth—fixed	15
Worth—debt	25
Sales—receivables	10
Sales—merchandise	10
Sales—fixed	10
Sales—worth	5
Total value of ratios	100%

This method of expressing the relative importance by percentages of the total importance is a simple statistical process. The percentages are purely arbitrary and in the table above are the ones most frequently used by the writers. Any other analyst can reassign these weights so as to express his individual feeling of relative importance and still use the index method, the only restriction being that he keep the total 100 per cent.

As has been stated, certain of these ratios become decreasingly important under certain conditions. One such condition is that of a distributing company that rents its place of business and, therefore, may have a negligible amount invested in fixed assets. This investment may easily decline to less than 5 per cent of the total assets, as indicated on the 100 per cent or common-size statement.

In such a case, the amount of net worth tied up in fixed assets is so small that its relationship to any other balance-sheet item or supplementary data such as sales is evidently of little value as a credit indicator. In the table given the net-worth-to-fixed-asset ratio carries a weight of 15 per cent and the sales-to-fixed-asset ratio 10 per cent, or a total of 25 per cent in weight based on these two ratios, of which fixed assets form a part. If the case be such that these two ratios are to be discarded, some new allocation of the weights must be made to maintain the 100 per cent total. This can be done in either of two ways. The weights usually assigned to these two ratios can be distributed to the other ratios or substitute ratios can be used in their place. The following table indicates graphically how this may be accomplished.

Ratio	Redistribution of weights	Substituting other proportions
Current ratio	30%	25%
Worth—debt	30	25
Sales—receivables	15	10
Sales—merchandise	15	10
Sales—worth	10	5
Cash and rec.—current debt		15
Working capital—total assets		10
Total	100%	100%

The fact remains that any number of proportions may appeal to individual analysts and that these have relatively different analytical values that can be expressed by this method. It is also important to recognize the fact that this establishing of relative values is upon a purely arbitrary basis in the selection of which the individual experience is a large factor. The weights in the first table have proven to be quite indicative when used in an index formula by the writers through many experiments. As will be shown shortly, this arbitrary weighting has a quantity rather than a quality effect on the index in any event. While its arbitrary feature has ~~mitigated~~ against its general militated and widespread use, its adaptability is coming to be recognized and its quality feature understood.

WHAT IS AN INDEX?

At present credit analysts use the current ratio as an index very largely. Its movements up or down are generally accepted as an indicator or index of improvement or decline in credit strength. While the current ratio has indicative value, it is far from being the sole or even the most important indicator. To have a true index there should be some formula that would combine within itself the most important proportions of indicative value and reduce these related movements to one figure that would rise or fall in accord with the preponderance of movement of the several separate proportions. If we may assume, for the purposes of present argument, that the reader accepts, temporarily at least, the statement that the current ratio and the worth-to-debt ratio have an equal value, then this matter can be discussed in figures in a way to bring to this weighting a clearer understanding. The assumption then is that both ratios have the relative value or weight of 25.

For argument's sake the further assumption is made that 200 per cent is normal for both of these ratios. That is, the current assets should be twice the current debt and the net worth twice the whole debt in order that the proportions of the company be considered as at parity with the desired standard for credit strength.

At this time the special case is brought up for consideration in which the current ratio is 250 per cent. The analyst who uses the current ratio as an index would logically say that this company was 125 per cent strong as compared with the standard because the 250 per cent current ratio is one and one-quarter times as high as the standard (250 being 125 per cent of 200). If however, the worth to debt ratio is at the same time only 150 per cent instead of 200 per cent, then in this aspect of the risk the company is only 75 per cent of parity to the proportion accepted as satisfactory for this ratio (150 being 75 per cent of 200). In one proportion, then, the company is 25 per cent above par and in an equally important one 25 per cent below par. This is evidently an offsetting wash. The two weights for these two ratios were both given at 25. Added together, the value in analysis of the two ratios would be expressed by them as 50. If the analyst takes 125 per cent of 25 to secure a value for the current ratio, he would get 31.25. If he took 75 per cent of 25 he would get a value for the worth-to-debt ratio of 18.75. These two values added together would give him 50, or the par value for the two ratios in total. By this process, then, it is evident that several good or bad indications can be combined in a manner to show the total net result of strength or weakness, or that it will generate a truer index than a reliance upon a single proportion.

AN EXAMPLE OF AN INDEX

The following tabulation reduces to figures the development of an index which relates, on a weighted scale, the several proportions of a hypothetical statement to a set of proportions temporarily accepted as reasonable for such a company. The first column lists the ratios, the second the weights, the third the accepted as proper or base ratios, the fourth the ratios for the company, the fifth the relation of the company's ratios (column four divided by column three) and the sixth the indicative values for each ratio (column five multiplied by column two).

In this example both of the two most important ratios are slightly above the assumed proper proportion. But the other five ratios are below the proportions assumed as proper for them in a degree sufficient to make their effect more than enough to offset the above-par effect of the two

Ratios	Weights	Base ratios	Company	Relation	Value
Current ratio......	25	200%	220%	110%	27.50
Worth—fixed.....	15	250	220	88	13.20
Worth—debt......	25	150	160	106	26.50
Sales—rec.	10	600	500	83	8.30
Sales—mdse.	10	800	600	75	7.50
Sales—fixed.......	10	400	400	100	10.00
Sales—worth......	5	300	240	80	4.00
Index total value	100				97.00
		Index below par			3.00

RATIO VALUES AND WEIGHTS

Ratio points	Above par	Below par
Current ratio (27.50–25)	2.50	
Worth—fixed (15. –13.20)		1.80
Worth—debt (26.50–25)	1.50	
Sales—rec. (10–8.30)		1.70
Sales—mdse. (10–7.50)		2.50
Sales—fixed (10–10)	0.00	0.00
Sales—worth (5–4)		1.
Total	4.00	7.00
		4.00
Net below par		3.00%

main ratios, leaving the company below parity as a whole. The index total is a more complete and sensitive as well as a safer indication of strength than either or both of the other two ratios, even when they are considered the most important.

CONTROLLING THE INDEX

Not infrequently some single ratio may be abnormally dislocated to a dangerous degree. If it happens that the sales-to-net worth be three, four, or five times the base ratio, then the effect upon the index may be serious unless controlled. If it were assumed, in the example cited, that the sales for the company were nine times the net worth, showing the sales-to-worth ratio as 900 per cent, the index formula would be vastly different. The relation between 900 for the company and 300 for the base would be 300 per cent for the relation column. This would give a value for this ratio of 15 and if all the other data remained the same would raise the index to 108 per cent or 8 per cent above parity.

The writers have become convinced that the upward movement of the value for any one ratio must be controlled. Extended experimentation has convinced them that this is not only theoretically reasonable, but absolutely necessary to develop a safe and sane index. Any ratio can in theory fall to such a low level as to reduce its value to zero. This makes a downward movement for each ratio value and for the index of 100 per cent theoretically limited. For this reason it was decided to limit the upward movement or value influence to twice the weight assigned to any ratio, thereby limiting the upward swing of the index to 100 points above parity, or equal in degree to the possible downward swing. In the early experimentation this limit to the value for a ratio was arbitrarily and abruptly fixed whenever the company's ratio exceeded a relation of 200 per cent with the base ratio. Thus, for the current ratio, using a base of 200 per cent against which to measure separate ratios, a value of 50 points was assigned to all current ratios over 400 per cent, or twice the base. Current ratios of 500 per cent, 600 per cent or 1,000 per cent all carried equal values with the 400 per cent ratio, or 50 points. This never seemed reasonable, and after consultation with several eminent statisticians a method of control has been adopted by the writers in their analytical work which has given highly satisfactory results in actual application.

This formula starts with parity and allows for the adding of a second one hundred points, less the inverted relation between the company's ratio and that proportion being used as a base. The plain arithmetical relationship formula for securing the relationship of a ratio to its base is as follows:

$$\text{Relation} = \frac{\text{Subject's ratio}}{\text{Base ratio}}$$

The formula for controlling dislocation within an upward limit of relation to something below 200 per cent is as follows:

$$\text{Relation} = 100 + \left(100 - \frac{\text{Base ratio}}{\text{Subject's ratio}}\right)$$

As a matter of usage the base ratio is divided by the subject's ratio and the result subtracted from 200 per cent.

Reverting to the index schedule and the assumed condition in which the sales to net worth was 900 per cent, and applying this formula to get a value for this ratio, the result would be quite different and would produce a much safer index. In the first discussion the arithmetical formula was used as follows:

$$\text{Relation} = \frac{\text{Subject's ratio}}{\text{Base ratio}} \text{ or } \frac{900}{300} = 300\% \text{ relation.}$$

By using the control formula the following would have been developed:

$$\text{Relation} = 100 + \left(100 - \frac{\text{Base ratio}}{\text{Subject's ratio}} \text{ or } \frac{300}{900} \text{ or } 33\%\right)$$

or a relation of 167%

This relation applied to the weight of this ratio would have been 167 per cent of 5, or a value for the ratio of 8.35. This would have raised the index 4.35 points, or to 101.35 instead of 108.00. This figure of 101.35 per cent of parity seems more reasonable.

The careful reader will have noticed that the current ratio for the company was also above the base assumed for it, and therefore the control formula should have been used. The following indicates how this would have worked out.

$$\text{Relation} = 100 + \left(100 - \frac{\text{Base ratio}}{\text{Subject's ratio}} \text{ or } \frac{200}{220} \text{ or } 90\%\right)$$

or a relation of 110%

This is the same relation as by the arithmetical method. A peculiarity of this formula is that in the first or lower stages in which the subject's ratios are only slightly above parity both the arithmetical and control formulae produce nearly the same result. In the higher stages the difference becomes very marked. As a matter of close analysis, when any single ratio becomes abnormally high, much above parity to an accepted base, it should be relegated to the background and the other proportions be allowed to function without hindrance by the abnormal strength of one proportion. In a way it may be compared to a legless man with supreme shoulders and arms. Behind a covered table he might seem an ideal, but with the screen removed he would not be fit for a sculptor's model of an athlete. The discus thrower must have all anatomical parts, not only developed but complete. To be sound the credit risk must have all of its proportions near enough to be both reasonably complete and well proportioned. A superstrength in one proportion cannot make up for an abnormal deficiency of another. A bridge with either the supporting members or the roadway abundantly strong, but with the remaining element weak, is an unsafe bridge. What difference does it make if a bridge has superstrong girders if the roadway be rotten planking or if the roadway be made of sound oak planking covering rotten stringers. In either event the passenger over such a bridge is in dire danger.

The writers accept no credit for the adoption of this control formula except for the recognition of its necessity and its actual adoption and the experimentation which has seemed to prove its worth. It was offered to them by Dr. M. T. Copeland and his assistants of the Harvard School of Business Administration in response to an open request for a scientific control of a possibly dangerous analytical complication. It has seemed to meet this need admirably, and in a measure follows established practice in the use of logarithmic charts to graph conditions.

CHAPTER XI

Bases for Ratio Analysis

In order to measure movement of any kind it is necessary to have some starting point from which to register. To measure strength there must be some standard of comparison. People wonder at the strong man of the vaudeville or circus who lets his attendants place a piano on a platform he is upholding while resting on his back. As compared with the average man he is immensely strong. But if the weight of the piano and its relation to his muscle size be compared with the weight which an ant can not only sustain, but carry away, in relation to the ant's muscle size, then the strong man may well seem puny. To be equally strong he would have to tuck a freight car under each arm and walk jauntily up the street. Speed, size, strength, wealth, and values are all only comparative matters. Credit strength and analytical goodness for credit are almost as comparative. But in spite of this our so-called credit science has failed to recognize the differences in types of business which quite logically produce different inherent proportions in the figure facts. Of recent years there has been a growing appreciation of the importance of study of relationships of proportions. This development has carried with it the development of data to be used as bases for this type of analysis. The combination of the principle ratios into a recordable index figure which will reflect the consolidated influence of these proportions on the credit decision is nothing but a logical substitution of a more accurate and sensitive indicator for the current ratio.

THE GENESIS OF THE INDEX

About 1921 a request was made for a sample of analysis by the ratio method running over a period of fifteen or more years, and if possible disclosing two separate or distinct trends for similar companies. Because of the public nature of the companies, as far as published data were concerned, the statements of the Westinghouse Electric Company and the General Electric Company from 1903 or thereabouts to the date of the study were used as examples. An explanation of the methods of the analysis will give a good explanation at the same time of one sort of base, often used by the writers, from which to measure the trends of a company.

The first step in the analysis was to reduce the statements of each company to a uniform style and spread them on two comparison sheets for the period. The several major ratios were then computed for each year for each company. With these data prepared, the question arose as to a base against which to compare statement figures and proportions of each year. At that time there were no available data with which these figures could be compared and it was necessary to develop such a base from within the figures themselves. To accomplish this the two comparison sheets were cross-footed and these cross-footed or period statements combined into one mass statement. It was felt that this combined statement would reflect with a fair degree of accuracy the average joint positions of the two companies for the period. As a matter of credit statistical nomenclature such a cross-footed statement is now called by the writers a "period statement," as it reflects the average in both proportion and size for the period, weighting automatically for growth.

The major ratios were developed from this joint period statement. The separate ratios for each company in each year were then analyzed in their relation to these period ratios, and an analytical study made which traced quite definitely certain tendencies in development. This report comprised some ten or fifteen pages of typewritten analysis. One reader asked whether it would not be possible to create a method whereby the ratios and their relation to the period base ratios could be combined into a single index number for charting purposes. The index discussed in the preceding chapter was developed after much discussion with statisticians of recognized standing and applied to the figures. The conformity of the chart for the index figure to the general discussion of the analysis was startling in its accuracy. The index figure did not at all times move with the current ratio, nor, for that matter, with any single ratio. But the chart visualized the deductions in simple form and very clearly emphasized the true trends in credit position.

INTERNAL ANALYSIS

This experiment gave more than just a method of expression to the composite net result of the several ratio indications. It was the first step toward establishing a base from which to measure trends. Ordinary comparative analysis takes statements in rotation or sequence, so that any one statement is compared normally to the one preceding as a basis of comparison and later becomes the base by which the next statement is measured. There is a grave danger in this process that is perhaps not generally appreciated. If a statement shows a weakened condition it may alarm the analyst and he may suggest remedies to his customer. Certain of these may be applied and the next statement may show a better or stronger set-up. It will be compared with the preceding statement and, even when using an index or ratio method, show a position of considerably greater strength. But in this method it is being compared with a weak base and its apparent increase in strength may be exaggerated thereby. For example, if an amount of 100 be reduced to 75 it has declined 25 per cent of the first amount. If in the next period it rise again to 94 or 19 points, it has increased 25 per cent of the 75 base. The percentage of rise or decline is the same, but it is against two different bases and the figure has not returned to 100. If the figure were returned to 100, the third period, it would have risen 25 points from 75, or 33 1/3 per cent.

The careless analyst seeing first a decline of 25 per cent and then a rise of 33 1/3 per cent might easily fall into a conception that the number had risen above its original size or strength. There is then great danger of confusion in comparing statements serially unless this differentiation as between bases is clearly understood and the deviation corrected.

By developing period statement ratios, weak statements and strong statements in the series are automatically averaged and spasmodic deviation from temporarily unstable bases reduced to a minimum. It is quite feasible to create a period base of five or six years in most instances, using the first five or six statements of a series for the purpose. If the analyst wishes he may spread this period statement on his comparison sheet and use it and its ratios as a base. If he wishes he may create a separate period comparison sheet by starting with the total period statement of available statements and add successive or subsequent statements to this, comparing each single statement to a cumulative period statement. Or again, having made up a period statement from five successive statements he may each year drop off the first of the five and add the current statement. This would give him at all times a five-year period statement to use as a base. It, being an average position, would be more stable than any single statement for use as a base, and hence safer. There are other variations of this procedure, but these are the important ones for our general departmental purposes.

A ratio and index analysis against a period statement is often most instructive but it is not always sufficiently complete. In many instances a company has been found to be showing an internal improvement and at the same time to be falling behind the movement of its competitors so rapidly as to be unable finally to keep up its competition and passes out of the picture. Therefore, a real need for an external as well as an internal analysis exists.

TYPICAL FIGURES

In the chapter dealing with the theories of ratios the statement was made that no set figure could be considered as equally applicable to proportions of different kinds of business at one and the same time. The differences in the fundamental values of inventories make for greater or less shrinkage, sudden change in value or stability, to such a degree that if a current ratio of 200 per cent is correct for the millinery or style shoe shop, it is ridiculous to demand this proportion for an industry in which the style-value change of inventory is slow and of no great proportions, such as in the wholesale hardware or grocery business. This same argument holds for any of the ratios. Therefore, the analyst should be in possession of an understanding knowledge of what to expect for any proportion or ratio in any industry.

Most bank credit executives and analysts have another handicap to overcome. The breadth of experience in any one line may be either broad or comparatively narrow. There are instances of banks that have a customer contact rather specialized within one industry. Their files may contain a fair cross-section of one industry. This is not generally the case, but it may exist. Other banks, and this is by far the more usual case, have more limited contacts with a greater number of industries. When this more common condition exists the analyst within one bank is handicapped by a scarcity of material for examination by trades or industries. The bank with the concentrated customer trade condition often tries to diversify his risks by purchasing commercial paper in other industries. Taken outside his direct contact experience, such a banker usually buys on an inspirational conception of what constitutes a proper set-up, largely overawed by a current ratio. In any event, there is a strong reason or even necessity for a better understanding of the usual proportions existent at any given statement period in any line of industry so that goodness for a grocer will cease to be measured by the Easter style for hats or the height of a French heel.

Since the war a great deal has been said, written, and prophesied about "normal" or "normalcy." Perhaps our economic strains may some day readjust themselves to a "normal" if such a condition ever existed. No one can state definitely when this will be because each one has a different conception of what it is. To some it means that prices will return to 1913 levels. To others it means that some day we may pay as we go instead of paying after we have gone. No doubt some descendants of Pilgrims think normal means street-sweeping skirts and blue Sundays. Normal as a matter of fact is a moving thing, not a dead past. The writers do not like to hark back to a condition now called normal that in its time was probably called abnormal, and something not so good as something else then called normal. If the world is progressing, and we believe it is, then the constantly created new devices of manufacture and finance need new appreciations and new skill in handling, not old standards.

Therefore "normal" is discarded as a thing against which to measure a present credit position. What is really needed is a flexible knowledge of what is usual or common in the proportions of any industry to-day. Such backgrounds are in need of at least annual revision, as the march of business during twelve months' time will bring about different sets of conditions that will produce new sets of proportions as common within an industry as of about one date.

ARITHMETICAL SELECTION

The process of picking out what is a usual or common current ratio may at first appear to be a simple arithmetical problem. The current ratio is used here as a specimen because the methods of selecting usual proportions for any ratio would be the same, and therefore explanation of method in this text will be confined to the current ratio. This particular ratio is used, as it is universally accepted as a measure.

An arithmetical method would consist of adding together all of the current assets of a large group of similar type statements—for instance, the wholesale grocery business—and dividing this by the total of the current liabilities taken from the same statements. This process would produce a combination current ratio, it is true, but it would be very open to criticism. In such a process the larger statements would have a tendency to make the composite ratio approximate their ratios. This might or might not be a true usual figure. An example in numbers may make the arithmetic of this process and its dangers more apparent.

Company	Current assets	Liabilities	Ratio
1	10,000,000	5,000,000	200%
2	100,000	40,000	250
3	100,000	40,000	250
4	100,000	40,000	250
5	100,000	40,000	250
Total	10,400,000	5,160,000	201

By adding the current assets of five companies and dividing them by the total of the current liabilities a current ratio of 201 per cent is developed. But it is clearly evident that this is not the common or usual current ratio for this group of five companies. Therefore, a simple arithmetical method must be discarded.

THE METHOD OF THE MODE

The strictest application of the method of the mode is not used by the writers, for purely practical reasons. Under the method of the mode a series of numbers is used, starting with the lowest of any group to be analyzed and running up to the highest. These are set at the head of columns and each number of the group then entered in the column controlling its size. The number at the head of the column having the most entries becomes the mode. It is, in other words, the number most frequently repeated in any group of numbers. Facetiously it might be called the stylish, modish, or fashionable number.

In the statistical work of the writers for the Robert Morris Associates, a variation is used from this strict method of the mode. The headings for the selecting columns cover a range, and any ratio within the range of any column heading is entered in that column. The headings for the current ratio columns cover ranges of 25 points, start with 125, and run up to 400, with a low column at the left and an over column at the right. The 125 column is for ratios of 125 per cent up to 149 per cent, the 150 column for ratios of 150 per cent and up to 174 per cent. The over column is for ratios of 425 per cent and over. The reader will grasp this more fully when the text reaches the Modal Chart on page 175.

The ratios which fall within the range of greatest frequency are totaled and averaged and called the modal ratio. This average is a better measure of the usual than the arithmetical average, as it expresses the center of density or center of repetition.

THE MEDIAN FIGURE

In any series of numbers there is a central figure. Thus in the series, 1, 2, 3, 4, 5, 6, 7, 8, and 9 the number 5 is the central one, or median. If we were to pick out 5 as a common figure we would be high just as often as we would be low. It is a kind of fulcrum for the series and an important factor in selecting what may be called a usual figure. In the series just given it is also the arithmetical average.

The writers use it in their selection work because it gives influence to the extremes that do not remain within the regular range columns. If there are many ratios in the over column the median moves up the scale. If the dislocations are in the low column it moves down the scale. In this abnormally good statements or those excessively low affect the selection of the usual through the median, in a small degree.

EXAMPLE OF SELECTION PROCESS

For the purpose of explanation of the method used in selecting a current ratio recourse is made to one of the industry studies of the Robert Morris Associates, of several years ago. The data covered 166 wholesale grocers. When these separate statements had been combined the figures produced the following mass or combined statement.

GROCER MASS STATEMENT

166 names

Cash	$ 11,690,000
Receivables	64,679,000
Inventory	99,389,000
Securities	433,000
Misc. current assets	1,006,000
Total current assets	$177,197,000
Fixed assets	53,442,000
Total	$230,639,000
Payables	$ 73,808,000
Taxes	1,549,000
Misc. current liabilities	3,875,000
Total current liabilities	79,232,000
Funded liabilities	3,194,000
Total debt	82,426,000
Reserves	4,712,000
Net worth	143,501,000
Total	$230,639,000

The current ratio for this statement is 223 per cent.

Following the preparation of this mass statement, which was reduced to a 100 per cent or common-size statement, the current ratio for each separate statement was developed and entered on a modal sheet as here shown.

MODAL SHEET
For 166 wholesale grocers
Current ratio

125	150	175	200	225	250	275	300	325	350	375	400	Over
131	152	176	200	225	251	276	306	333	360	381	409	436
134	153	177	201	*226	254	281	306	334	360	381	423	446
147	158	177	201	230	254	282	307	337	362	381		455
148	160	177	201	231	254	282	315	341	363	382		516
148	160	179	202	232	254	282	316	343		383		898
149	162	183	203	233	254	283		345		395		953
	162	184	203	235	257	285						
	166	184	203	236	257	287						
	166	186	203	237	259	287						
	168	187	203	237	260	294						
	169	189	205	239	260	295						
	170	190	205	239	261	298						
	171	191	206	240	264							
	172	192	207	240	264							
	173	192	207	240	264							
	174	193	207	240	264							
		193	207	241	267							
		195	208	241	268							
		196	209	242	269							
		198	211	246	270							
		199	211	247	271							
		199	211		272							
			211		272							
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			222									
			224									
			224									
6	16	22	37	21	23	12	5	6	4	6	2	6-166
6	22	44	81	102	125	137	142	148	152	158	160	166
		Ave. 210										

It is at once evident that more ratios fall within the column having a range from 200 to 224 per cent. When this column is footed and averaged the average is found to be 210 per cent. This figure is then selected as the modal figure. The reader will notice that it comes pretty close to the center of the series for this column.

In this chart the ratios have been arranged in numerical sequence. The first four columns contain 81 ratios. The whole series contains 166 ratios. Half of 166 is 83. Therefore, the middle or median figure of the whole series must be two beyond the last in the fourth column or the second in the fifth column. The ratio is 226 per cent and is taken out as an element of selection.

The three elements have now been determined for this series and they are averaged as shown in the following table:

Modal column average	210%
Median of the series	226
Arithmetical figure of mass statement	223
Total	659%
Average	220%

When measuring the goodness or reasonableness of any current ratio it seems safer to test it by this sort of a background than against a current ratio of 200 per cent or "2 for 1," which has only a mythological value. If, for instance, 200 per cent had been used to test "Wholesale Grocers" at the time these data were prepared, 121 companies out of the 166, or nearly 73 per cent, would have shown higher ratios, and only about 27 per cent lower. A comparison with 200 per cent would not have compared the single grocer with true grocer position or the usual current ratio. The 220 per cent selected, however, has only 89 above it, so that it more nearly reflects the typical.

In some instances the modal average, the median, and the arithmetical ratio all fall in the same range, but this is not a common condition. To indicate the variations in elements the selection table for the eight main ratios of this industry, as of this date, is given below.

	Arith.	Mode	Median	Total	Selected
Current........	223	210	226	659	220
Mdse.—rec.....	153	124	143	420	140
Worth—fixed...	268	180	364	812	271
Worth—debt...	174	148	178	500	167
Sales—rec......	883	1,045	943	2,871	957
Sales—mdse....	575	509	556	1,640	547
Sales—fixed....	1,069	629	1,535	3,233	1,078
Sales—worth...	398	392	430	1,220	407

SUMMARY

In any industry the proportions of its large units have a decided bearing on a combined statement of the industry. Hence, the arithmetical element from the mass statement is important. However, more statements may center around some other proportion and therefore it is important to introduce some element into the selection that will give effect to this grouping or concentration. A few, or many, statements may have excessively high or low ratios. These, too, must be allowed to influence the selection, as they have an effect on the industry. This effect is shown by the upward or downward movement of the median or middle of the series below or above the arithmetical or modal figure. These three elements averaged give a sensible figure to use as a guide in determining the approach of any single ratio to what may be usual at any one time in any one industry.

The 100 per cent statements given are for the mass figures developed from the total of the 166 grocer statements that have been used in this chapter as descriptive material and a single grocer company. The index is developed by the methods explained and relates the single company to the selected industry figures. In this case, the index figure rather closely approximates the relation of the company's current ratio to the selected current ratio. But this is not at all a common condition, as will be seen very clearly in the analyses which will be shown shortly.

An Example

100% STATEMENT FOR WHOLESALE GROCERS AND A SINGLE COMPANY

	Group	Individual
Cash	5.07	1.02
Receivables	28.04	28.15
Inventory	43.09	68.96
Listed securities	.19	
Miscellaneous	.44	
Total current	76.83	98.13
Total fixed	23.17	1.87
Total	100.00	100.00
Payables	32.00	60.36
Taxes	.67	
Miscellaneous	1.68	
Total current	34.35	60.36
Funded	1.39	
Total debt	35.74	60.36
Reserves	2.04	
Net worth	62.22	39.64
Total	100.00	100.00
Sales	247.86	177.16

RATIO COMPARISON BETWEEN SELECTED OR TYPE AND THE SINGLE COMPANY

	Selected	Individual
Current	220	162
Mdse.—rec.	140	245
Worth—fixed	271	2,119
Worth—debt	167	65
Sales—rec.	957	629
Sales—mdse.	547	256
Sales—fixed	1,078	9,473
Sales—worth	407	446

RELATIONSHIP AND INDEX BASED ON TYPE FIGURES

	Wt.	Relationship in per cent	Value	
Current.................	25	73	18.25	
Mdse.—rec.		143		—Formula
Worth—fixed............	5	188	9.40	—Formula
Worth—debt............	25	39	9.75	
Sales—rec.	15	65	9.75	
Sales—mdse.	15	47	7.05	
Sales—fixed.............	5	189	9.45	—Formula
Sales—worth............	10	109	10.90	—Formula
Index..............	100		74.55	

CHAPTER XII

Summary

In Chapter I the writers broke down the factors governing a credit decision into three classes—the personal element, the financial element, and the cyclical element. The relative importance of these factors of the credit decision was expressed as being 40 per cent, 40 per cent, and 20 per cent. The careful credit man must analyze his risk with all three factors in mind and the risk must be able to show sufficient strength in each to be classed as desirable.

In common practice the figure facts of the property statement are normally classified as financial data. The analyst relying primarily on a scanning of the dollar figures and the current ratio has been apt to criticize the more detailed and extended use of the figure facts as exaggerating the importance of the financial factor. This reaction is the result of the common practice of a limited examination of the figure facts and a curtailed appreciation that from the figure facts one can develop several tests of managerial ability.

Current ratios reflect liquidity of condition and worth-to-debt ratios indicate strain or ease of capitalization and are therefore strictly financial elements. These two proportions are those most commonly in use and accepted as proper ratios to be used in analysis. The acceptance of these ratios has more firmly imbedded in the analytical mind the impression that the analysis of statements lies within the financial element of the risk.

Merchandising capacity or ability consists largely in developing the largest volume of trade while tying up the smallest amount of capital in inventory. Capital invested in inventory is not productive of profits, if we eliminate speculative profits from rising prices. Profits accrue as the result of the sale of merchandise. Dead stock lying on shelves or in warehouses is nonproductive. Therefore the measure of merchandising capacity lies in the relation of sales volume to inventories. This ratio is not primarily a financial element at all, but is one measure of the personal element in its capacity aspect.

Collection ability is decidedly within the personal element of any risk. The determination of and adherence to sales term is a part of this element. Receivables, as displayed on a property statement, are nothing but uncollected sales. If this sediment be too great, then there may be a perfectly just criticism lodged against the management of either poor collection ability or the extension of too liberal terms. The ratio of sales to receivables when regularly developed and recorded creates a measure of this personal element that may be of the greatest value in determining managerial ability. This ratio is very slightly financial in aspect but is primarily of value in its measurement of the policies and actual accomplishments of management and hence to a larger degree enters into the estimate of the personal element of the risk.

Current economic literature is full of references to the advantages of "mass production." Industrial engineers are active in bringing about efficient plant organization and production. The study of markets and advertising campaigns is now undertaken to stimulate the sale of fabricated goods to the highest possible degree. Competition has cut down the margin of profits. With all this in mind efficient management is vitally interested in the maximum production and sale of goods, together with the minimum tying up of capital in production or noncurrent assets. The measure of the accomplishment of a proper balance or a productive balance as between capital investment in fixed assets and its resulting productivity is recorded in the sales to fixed assets ratio very largely. The chain lies in the fact that plants are built to produce, sales efforts made to dispose of goods, and sales indicate the result of productive efficiency and competitive sales effort. The ratio of sales to fixed assets is then a measure of ability rather than a measure of a financial element. It is an adaptation of the figure facts to create a measure of the management.

Every turn of the business cycle creates in one of its phases the temptation to enlarge plants in order to get volume. The easy way to fabricate more goods is to have more fabricating machines. More machines make a greater investment of capital in fixed assets that is only justifiable when properly proportioned to net worth. The management that gets its volume at the expense of a maladjustment between net worth and fixed assets is open to caustic criticism. It is not enough to create an increase in net worth or an increase in sales volume unless both of these maintain a proper proportion to the amount of capital invested noncurrently. The ratio of net worth to fixed assets is a check against any tendency of management to invest excessively in fixed assets. While being a financial element in the measurement of capital liquidity it is also a measure of management in its indication of tendencies to seek volume through plant expansion rather than through increasing efficiency.

It seems reasonable, then, to assume that an appreciation of the personal element of any risk is not limited to observation of the personnel. Management, no matter how magnetic in personality, is not effective unless the figures reflect results of sound management. There are many executives who, like "Get Rich Quick Wallingford," sell their propositions through high-pressure sales methods and a temporary sense of soundness on the part of the credit grantor because of their engaging and plausible personalities. Careful analysis of the results of management, as shown by the figures, will often disengage fantasy from reality to the reduction of losses.

Observation of the character and principles of ethics indicated by any management is still of prime importance. But honesty of purpose and performance is not necessarily accompanied by effective management. When a pinch threatens it is comforting to feel that the management will "stand the gaff," but this is not all that is necessary. The personal element consists of honesty of purpose and effectiveness in performance. The first the credit man may cover by general observation. The second must be reflected in the figures. Therefore, a complete and comprehensive analysis of the figures goes beyond the purely financial position and touches the personal element.

GENERAL BUSINESS CONDITIONS

We have set 20 per cent as that part of the credit risk which rests on the general business condition. The many services which claim to forecast the business future and their popularity and wide use are pretty clear evidence of the appreciation of executives of the necessity of their understanding this factor in management.

As we have said, any company may be crippled or driven out of business through a general depression. Individual management must be able to sense general business pressures in order to arrange its affairs so as to weather depression. The contribution of any one company to a maladjustment of economic conditions may be slight, but when such maladjustment has progressed sufficiently stagnation occurs and the innocent suffer with the guilty.

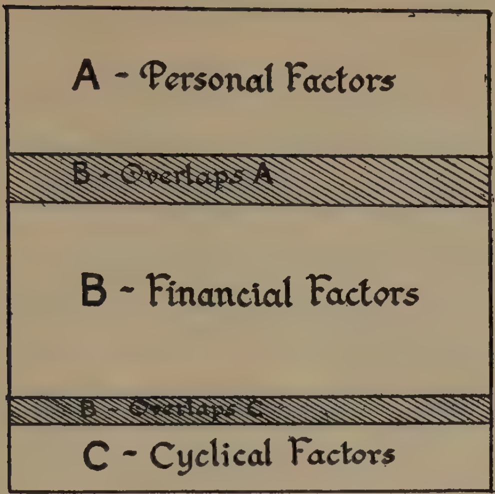
The question arises, then, as to what constitutes "general business conditions." The general business condition or the specific business condition in any one line of industry is nothing more than the composite condition. In the latter half of 1920 there was much comment on the dislocation of the inventory position and the so-called surplus of merchandise. Economists are at variance as to whether this should be called a general overinventoried position or the lack of consumption. In either case it amounts to a dislocation in the proportion between sales and inventories. Such students of credit as were noting closely the relation of sales to inventories noticed the 1920 dislocation as early as February of that year, and were in a position to begin protective measures well in advance of the general crowd to whom the appreciation of this upset became clear only several months later.

The figure facts of any one company throw but a shady light on general or specific trade conditions. But when many statements are gathered within a single industry and when many industries thus grouped are analyzed, then the figures overlap again the purely financial element and lend themselves to disclosing very material data concerning specific trade and general business conditions.

It seems quite evident to the writers that statement figures can be used to reflect much more than the purely financial element of the risk, although criticism against ratio analysis has primarily been that the method gave too much importance to this financial aspect and too little to the human elements of integrity and ability. The method is not advanced as a substitute for the latter, but rather to gather from the figures a viewpoint of this ability in addition to the usual and more indefinite reservations made through observation. The extent to which this method overlaps from the financial into the human and cyclical elements depends largely on the extent to which the figure analysis is expanded and in proportion to the intelligence exercised in its use.

With these thoughts in mind the chart in Chapter I is offered for observation, with some modifications to picturize this overlapping.

The Credit Decision - Revised



On either side of the "B" area is a shaded area overlapping both "A" and "C." This represents the section of those elements on which a complete analysis of the figure facts, so generally considered purely financial, throws light. The width of these bands is indeterminate, but they undoubtedly exist and existing are an urgent demand for complete analysis rather than current ratio or partial analysis.

Having discussed at some length the theories of this more complete analysis, the writers submit herewith a series of statements with certain analytical comments as a demonstration of their theories.

APPENDIX

The following pages, constituting a working appendix, bring to the reader a number of statement analyses made by the methods advocated in this volume.

In all but the first instance actual figures have been used so that the cases are real and not imaginary. While the statements were taken from open-market names or the public press, it has been thought wise to conceal identities. To accomplish this a given percentage has been applied to the figures, which, while changing dollar figures, has not affected the proportions in any way. Large companies have been written down in size and small companies up, so as to show an approximate uniformity in size.

These few examples have been selected, for the benefit of readers who may wish to see an actual demonstration of method, from many experiences, because each seems to show to good advantage some phase of this more complete analysis.

THE AUTHORS.

SPECIMEN ANALYSIS No. 1

THE "A" AND "B" COMPANIES

THIS is a study of two mythical companies the statements of which have been designed to show and perhaps exaggerate certain conditions that are often found in actual analytical experience. Every twist in the figures has been found in actual experiences and many of them are common complications. An analysis of these statements indicates quite definitely the importance and value of considering a risk from all angles rather than of limiting the analysis to a reading of the dollar figures and the development of a current ratio.

THE MATERIAL

These two companies, "A" and "B," are in the same general line of business and are located in the same city, so as to come under the same economic strains.

The analyst is given the dollar statements for each company for a five-year period, together with the sales for each year.

There are no industry figures with which to compare these companies, and hence it is necessary to revert to an internal analysis. To secure a base against which to measure these companies the five statements of both companies were added together to develop a combined period statement.

These exhibits constitute the analytical material and are as here indicated.

COMPANY A

Dollar Figures

	First year	Second year	Third year	Fourth year	Fifth year	A & B joint period
Cash	4,339	6,078	6,054	7,189	6,930	78,861
Receivables	41,779	49,096	51,580	60,477	55,966	755,120
Inventory	47,735	59,880	57,529	55,640	50,228	726,100
Total current	93,853	115,054	115,163	123,306	113,124	1,560,081
Total fixed	81,837	81,016	92,151	94,549	88,919	1,031,095
Total	175,690	196,070	207,314	217,855	202,043	2,591,176
Payables	46,856	55,331	50,626	53,483	51,238	736,104
Taxes		2,431	4,561	6,318	4,243	34,227
Total current	46,856	57,762	55,187	59,801	55,481	770,331
Funded	29,867	23,920	19,176	12,526	5,556	464,525
Total debt	76,723	81,682	74,363	72,327	61,037	1,234,856
Net worth	98,967	114,388	132,951	145,528	141,006	1,356,320
Total	175,690	196,070	207,314	217,855	202,043	2,591,176
Sales	225,024	279,772	309,934	314,452	295,225	3,800,743

COMPANY B

Dollar Figures

	First year	Second year	Third year	Fourth year	Fifth year	A & B joint period statement
Cash	5,301	8,917	10,169	11,467	12,417	78,861
Receivables	79,956	100,607	103,121	106,448	106,090	755,120
Inventory	43,460	71,017	94,833	121,084	124,694	726,100
Total current	128,717	180,541	208,123	238,999	243,201	1,560,081
Total fixed	81,639	84,844	95,441	138,211	192,488	1,031,095
Total	210,356	265,385	303,564	377,210	435,689	2,591,176
Payables	64,264	88,665	99,872	111,880	113,889	736,104
Taxes		3,158	3,158	5,696	4,662	34,227
Total current	64,264	91,823	103,030	117,576	118,551	770,331
Funded	39,126	47,424	66,055	97,358	123,517	464,525
Total debt	103,390	139,247	169,085	214,934	242,068	1,234,856
Net worth	106,966	126,138	134,479	162,276	193,621	1,3563,20
Total	210,356	265,385	303,564	377,210	435,689	2,591,176
Sales	349,906	429,419	508,986	572,605	515,420	3,800,743

COMPANY A

100 Per Cent Statements

	First year Co.	Second year Co.	Third year Co.	Fourth year Co.	Fifth year Co.	A & B joint period
Cash	2.47	3.10	2.92	3.30	3.43	3.04
Receivables	23.78	25.04	24.88	27.76	27.70	29.15
Inventory	27.17	30.54	27.75	25.54	24.86	28.02
Total current	53.42	58.68	55.55	56.60	55.99	60.21
Total fixed	46.58	41.32	44.45	43.40	44.01	39 79
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	26.67	28.22	24.42	24.55	25.36	28.41
Taxes		1.24	2.20	2.90	2.10	1.32
Total current	26.67	29.46	26.62	27.45	27.46	29.73
Funded	17.00	12.20	9.25	5.75	2.75	17.93
Total debt	43.67	41.66	35.87	33.20	30.21	47.66
Net worth	56.33	58.34	64.13	66.80	69.79	52.34
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	128.08	142.69	149.50	144.34	146.12	146.68

Ratios

Current	200	199	209	206	204	202
Mdse.-rec.	114	121	111	92	89	96
Worth-fixed	121	141	144	154	158	131
Worth-debt	129	140	179	201	231	110
Sales-rec.	538	569	601	520	527	503
Sales-mdse.	471	467	539	565	588	523
Sales-fixed	275	345	336	332	332	367
Sales-worth	227	244	233	216	209	280

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	99	24.75	98	24.50	104	26.00	102	25.50	101	25.25
Mdse.-rec.		116		121		114		96		92	
Worth-fixed	15	92	13.80	107	16.05	109	16.35	115	17.25	117	17.55
Worth-debt	25	115	28.75	121	30.25	139	34.75	146	36.50	153	38.25
Sales-rec.	10	107	10.70	112	11.20	117	11.70	103	10.30	105	10.50
Sales-mdse.	10	90	9.00	89	8.90	103	10.30	108	10.80	111	11.10
Sales-fixed	10	75	7.50	94	9.40	91	9.10	90	9.00	90	9.00
Sales-worth	5	81	4.05	87	4.35	83	4.15	77	3.85	74	3.70
Index	100		98.55		104.65		112.35		113.20		115.35

COMPANY B

100 Per Cent Statements

	First year	Second year	Third year	Fourth year	Fifth year	A & B joint period statement
Cash	2.52	3.36	3.35	3.04	2.85	3.04
Receivables	38.01	37.91	33.97	28.22	24.35	29.15
Inventory	20.66	26.76	31.24	32.10	28.62	28.02
Total current	61.19	68.03	68.56	63.36	55.82	60.21
Total fixed	38.81	31.97	31.44	36.64	44.18	39.79
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	30.55	33.41	32.90	29.66	26.14	28.41
Taxes		1.19	1.04	1.51	1.07	1.32
Total current	30.55	34.60	33.94	31.17	27.21	29.73
Funded	18.60	17.87	21.76	25.81	28.35	17.93
Total debt	49.15	52.47	55.70	56.98	55.56	47.66
Net worth	50.85	47.53	44.30	43.02	44.44	52.34
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.34	161.81	167.67	151.80	118.30	146.68

Ratios

	First year	Second year	Third year	Fourth year	Fifth year	A & B joint period statement
Current	200	196	202	203	205	202
Mdse-rec.	54	70	92	113	117	96
Worth-fixed	131	148	141	118	100	131
Worth-debt	102	90	79	76	80	110
Sales-rec.	438	427	493	538	485	503
Sales-mdse.	804	604	536	473	413	523
Sales-fixed	429	506	533	414	267	367
Sales-worth	327	340	378	353	266	280

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	99	24.75	97	24.25	100	25.00	100	25.00	102	25.50
Mdse.-rec.		56		73		96		115		118	
Worth-fixed	15	100	15.00	113	16.95	107	16.05	90	13.50	76	11.40
Worth-debt	25	92	23.00	81	20.25	71	17.75	69	17.25	72	18.00
Sales-rec.	10	87	8.70	84	8.40	98	9.80	107	10.70	96	9.60
Sales-mdse.	10	135	13.50	114	11.40	103	10.30	90	9.00	79	7.90
Sales-fixed	10	115	11.50	128	12.80	131	13.10	112	11.20	72	7.20
Sales-worth	5	115	5.75	118	5.90	126	6.30	121	6.05	95	4.75
Index	100		102.20		99.95		98.30		92.70		84.35

ANALYSIS

The dollar figures for Company A indicate an increase in net worth for this company of $42.039, or 42 per cent. Sales have increased $70.201, or 31 per cent.

The net worth for Company B has increased $86.655, or 81 per cent. Sales have increased $165.514, or 47 per cent.

A casual reading of the figures would seem to indicate a greater earning power for Company B and a greater ease in securing markets and expanding its business. Both of these are normally signs of effective management. At first glance and from the dollar figures Company B might seem to have a little the better of the comparison.

THE CURRENT RATIO

The next customary step in analysis is the preparation and study of the current ratio. In conformity with this practice the following table is submitted which registers the yearly current ratio for each company, the current ratio for the combined period statement and the relation which each of the separate yearly ratios bears to this period ratio.

	Company A		Company B	
Year	Ratio—	Rel. to period	Ratio—	Rel. to period
First	200	99% *	200	99% *
Second	199	98	196	97
Third	209	104	202	100
Fourth	206	102	203	100
Fifth	204	101	205	102

*Base or Period Ratio 202

Each single ratio would classify as two for one in the common language of analysis. The lowest ratio is 196, which reduces to 200 if decimals be eliminated. This read in the general way is 1.96 to 1. To eliminate the second decimal digit one would have to be added to the first decimal digit, which makes ten, and necessitate a carry over to the first whole number digit, making it a 2. The highest current ratio is 209, or 2.09 to 1. The second decimal digit would necessitate a carry over of 1 if dropped, so that the ratio would read 2.1 to 1. This first decimal digit if dropped is not enough to effect a carry over, so that if whole numbers only were to be used the ratio would be 2 to 1, or 200 per cent.

When related each year to the ratio of the period statement the percentage of relation somewhat exaggerates the difference in the actual ratios. The high point of relation to the base is 104 per cent and the low point 97 per cent, four and three points away from base parity, respectively.

As a matter of graphic display and for later consideration this relation of each ratio to that ratio, 202 per cent, used as a base, the following chart is prepared.

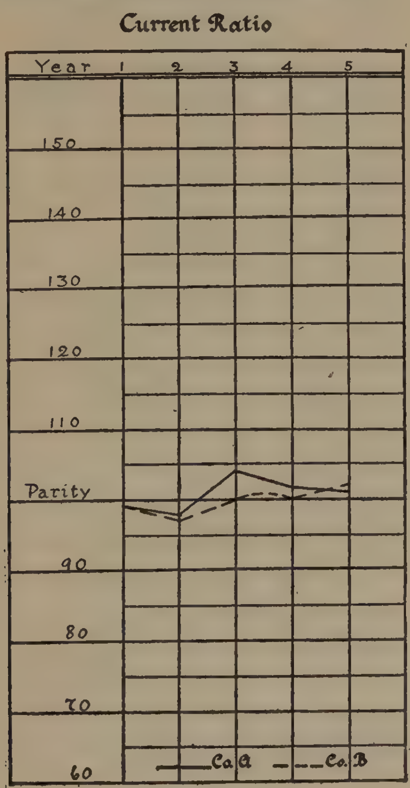


CHART No. 1

Before leaving this ratio it is interesting to note that at the end of the period Company B has a slightly higher current ratio. This might seem to indicate a better credit position, especially when taken with the increase in net worth and sales which this company showed in comparison with Company A.

WORTH TO DEBT RATIO

The worth to debt ratio is considered by the writers equal in importance to the current ratio. Therefore this ratio is presented next for consideration in tabulated form.

	Company A		Company B	
Year	Ratio	Rel. to period	Ratio	Rel. to period
First	129	115%*	102	92%*
Second	140	121	90	81
Third	179	139	79	71
Fourth	201	146	76	69
Fifth	231	153	80	72

*Base or Period Ratio 110

The movement for this ratio for the two companies is quite different from the movement of the current ratio. Company A starts the period by having $129 of net worth for each $100 of debt and ends the period by increasing its owned capital to $231 for each $100 of debt. This is an increase of $102 per $100 of debt and shows remarkable conservatism of earnings and application of owned capital to the needs of the business.

In contrast with this Company B starts the period with $102 of net worth for each $100 of debt, reflecting a tendency to rely on borrowed money to get capital with which to operate. At the end of the period under analysis Company B has only $80 of net worth for each $100 of borrowed money or debt. Contrary to the showing of Company A, Company B has grown to rely more heavily on creditors. There is a loss of $22 of net worth per $100 of debt and the creditors are putting up $20 per hundred more of the capital at use than the company.

While Company A has secured a much stronger control of the whole capital by increasing its ownership proportion, Company B has lost control because the creditors have more at stake than the owners. Company B has become decidedly "top-heavy with debt" in spite of its apparently liquid position. Reference to the "100 per-cent-statements" indicates that the debts of Company B form 55.56 per cent of its total footings, whereas only 30.21 per cent of the total footings of Company A represent debt on the last statement.

The disparity between the movement of this ratio and the current ratio is found in tracing the funding operations. Company A starts with 17 per cent of its total footings represented by funded debt and reduces this figure to 2.75 per cent. Company B starts with a funded debt percentage of 18.60, not much in excess of Company A, but raises this by increased funding operations to 28.35 per cent. Company A has $88.919 in fixed assets with less than a 3 per cent mortgage against them. These fixed assets are an emergency reserve whereby it might secure substantial advances through funding operations. If it is safe to issue a 50 per cent mortgage, Company A could raise nearly $40,000 on its fixed assets, which would take care of over 70 per cent of its present current debt. Company B in contrast has a mortgage already about $27,000 in excess of a 50 per cent point of its fixed assets. It is already too heavily mortgaged and there is a possibility that mortgage obligations may become a residuary general claim in liquidation.

This funding procedure offers the first upset to the general observations on relative strength found in the dollar figures and the current ratio. Such a condition is often present and is the reason why the writers conscientiously object to computing a current ratio and leaving this proportion, worth to debt, to mental reservations. Such methods emphasize a measurement that all borrowers attempt to bolster up and present in its best light. If Company A were to raise its funded debt to the same percentage of its total footing as Company B it could secure through such an adjustment approximately $50,000 which applied to current debts would reduce these to less than $6,000. The current ratio for Company A would then be around 1,800 per cent to compare to that of 205 per cent for Company B.

This relation of worth to debt for each company is presented in chart form to the same scale as was used for the current ratio. The chart represents the relation of each ratio to the period ratio used as a base and graphs the trend of the ratio for each company in comparison to this period ratio as par, or 100 per cent.

Worth-Debt Ratio

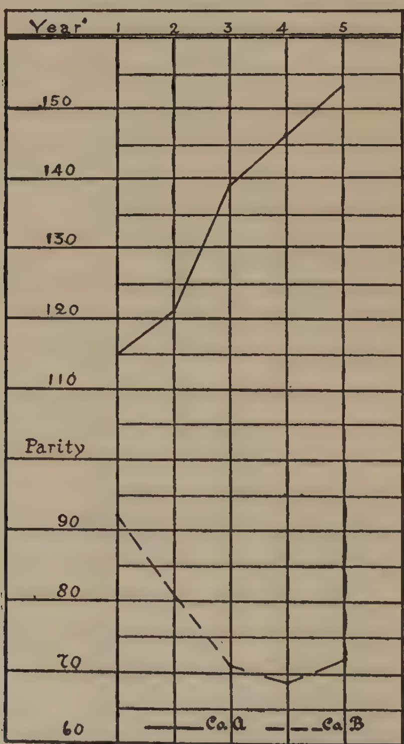


Chart No. 2

There is no similarity in the charts at all, just as there is no similarity in the financing. The top-heaviness of the debt of Company B becomes appallingly evident. The window-dressed current ratio will not mislead the creditor who analyzes beyond the current ratio.

WORTH TO FIXED—SALES TO FIXED

These companies are both manufacturing companies, hence the financing of their plants or fixed assets and their productivity are important matters. Owner financing is expressed by the ratio of net worth to fixed assets. The chart for both companies is as follows:

	Worth to fixed ratio			
	Company A		Company B	
Year	Ratio	Rel. to period	Ratio	Rel. to period
First	121	92%*	131	100%*
Second	141	107	148	113
Third	144	109	141	107
Fourth	154	115	118	90
Fifth	158	117	100	76

*Base or Period Ratio 131

Here again we find Company A showing at an advantage. The first year Company B had $131 of net worth for each $100 of fixed assets, while Company A showed $121. By the end of the period Company B, however, has only $100 of net worth for each $100 of fixed assets, while Company A has $153. This shifting in the financing of fixed assets is doubly significant when one reads it with the funded debt condition just discussed as a background. Company A has been conservative in plant extension, has reduced its funded debts, and very nearly owns its fixed assets unmortgaged. On the "100 per cent statement" its fixed assets have fallen from 46.58 per cent to 44.91 per cent. There is no sign of overexpansion of plants. Company B, on the other hand, has not been so conservative. In this company the increases in fixed assets have been accompanied by heavy funding operations and a decided decline in the owned capital relation to them. On the "100 per cent statement" the percentage has gone up from 38.81 to 44.18. There is a greater proportional investment in fixed assets which are financed to a lesser degree by owner capital. This again emphasizes the lack of reserve strength in them for any crisis.

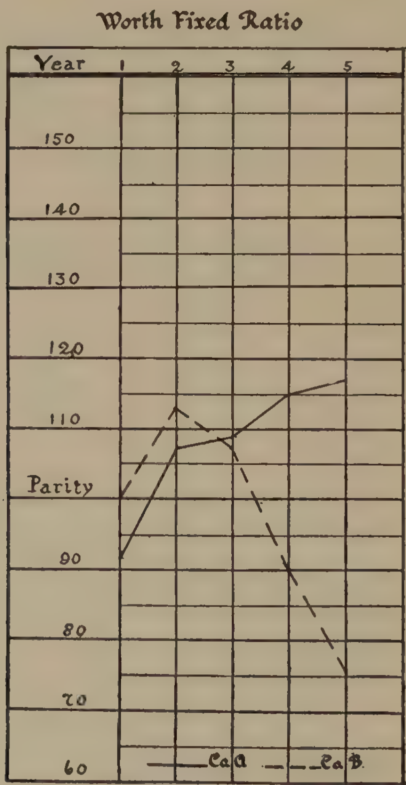


Chart No. 3

With this expansion in mind one might seek justification for Company B in the productivity of these assets as expressed in the relation of sales to them. The following tabulation indicates the performance of the two companies.

Sales to fixed assets

Year	Company A Ratio	Company A Rel. to period	Company B Ratio	Company B Rel. to period
First...........	275	75%*	429	115%*
Second.........	345	94	506	128
Third..........	336	91	533	131
Fourth.........	332	90	414	112
Fifth..........	332	90	267	72

* Base or Period Ratio 367

Company B turned to heavy plant expansion during the last two years of the period. Prior to that it indicated high plant sales yield and this established a high period relation. For this reason the relation of Company A's ratio is below

Sales Fixed Ratio

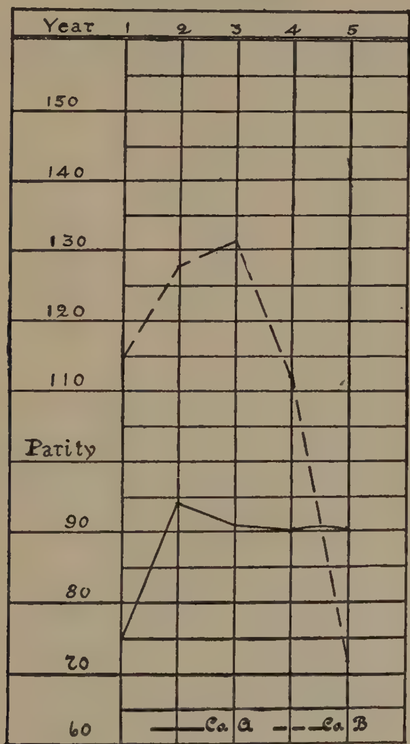


Chart No. 4

parity. But at no time is this relation as low as that of Company B for the last year. The figures of Company B express in the last two years the result of plant expansion without an ability to secure commensurate sales. Its plants have become less productive. It has, however, heavy mortgages that require large overhead costs, while Company A has maintained its productivity and does not have this heavy fixed charge.

These ratios suggest productive, conservative management for Company A and unproductive expansion for Company B, which has been graphed as Chart No. 4.

SALES—MERCHANDISE

Merchandising ability is an important factor and hence it becomes interesting to test this ability for these two companies by direct relative comparison. The tabular form is used as in the other ratios.

	Company A		Company B	
Year	Ratio	Rel. to period	Ratio	Rel. to period
First	471	90%*	804	135%*
Second	467	89	604	114
Third	539	103	536	103
Fourth	565	108	473	90
Fifth	588	111	413	79

* Base or Period Ratio 523

From some inherited stimulus Company B starts with a high merchandising ratio, which drops considerably below parity by the end of the period. Company A, starting below par, succeeds in raising the standard of its merchandising until it is substantially above parity. It is not necessary to engage in a long explanation to arrive at the conclusion that the merchandising element of the human factor for Company A is steadily and substantially improving. It would almost seem that Company B, on the other hand, has lost its merchandising capacity, so rapidly is this ratio falling. This is clearly shown in Chart No. 5.

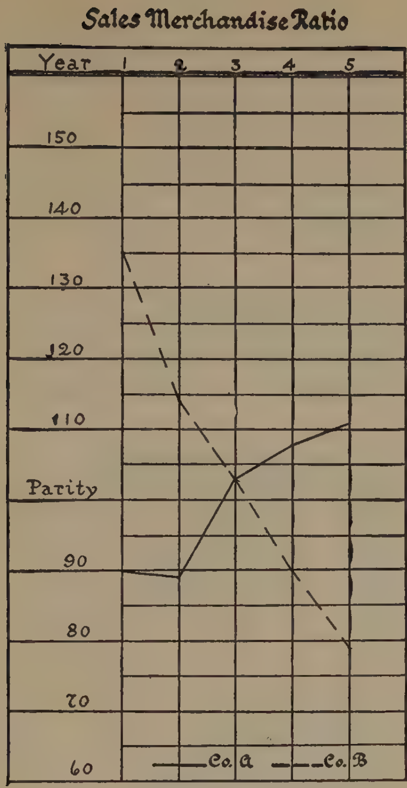


CHART No. 5

SALES TO RECEIVABLES

Merchandising and manufacturing companies are in business to sell—not finance. The relation of sales to receivables measures the financing habit. When sales as compared with receivables are high, then collections are rapid; when low, then customers are being financed. The comparison between these two companies in this element is shown in the table on page 202.

At all times Company A is above parity and in all but one year a better collector than Company B. The fourth year is intended to represent 1920. This was a year of general

	Company A		Company B	
Year	Ratio	Rel. to period	Ratio	Rel. to period
First...........	538	107%*	438	87%*
Second.........	569	112	427	84
Third..........	601	117	493	98
Fourth.........	520	103	538	107
Fifth...........	527	105	485	96

*Base or Period Ratio 503

sales collapse in relation to inventories. On the sales-to-merchandise table Company A showed a sharp decline, while Company B showed an increase. Due to its stronger debt position, Company A was able to carry its customers

Sales Receivable Ratio

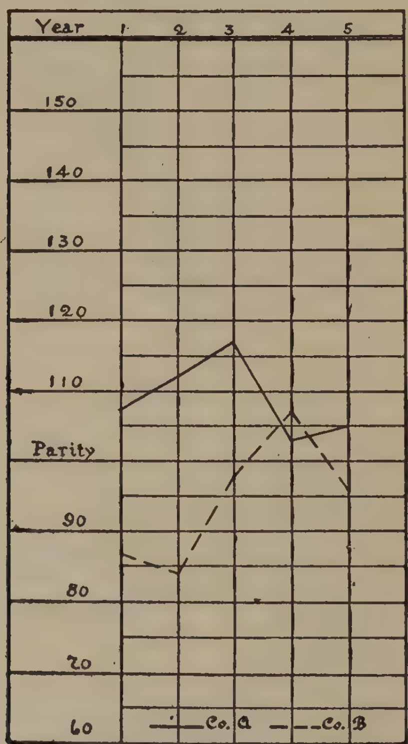


Chart No. 6

for a somewhat longer period and offered them not only merchandising service, but financial aid as well. Company B, being top-heavy with debt, could not do this, as it was under pressure itself. As a consequence Company A was in a better competitive position, and by slackening its terms a little kept its market the following year. This is shown on Chart No. 6.

SALES TO WORTH

This is not as significant a proportion, but is listed in tabular form for completeness.

	Company A		Company B	
Year	Ratio	Rel. to period	Ratio	Rel. to period
First	227	81%*	327	115%*
Second	244	87	340	118
Third	233	83	378	126
Fourth	216	77	353	121
Fifth	209	74	266	95

*Base or Period Ratio 280

Here Company B seems to have a little the better of the comparison, but, as has been said, the ratio is only secondarily important.

SUMMARY

The figures in dollars and the current ratio might lead the superficial analyst to conclude that Company A and Company B are approximately of equal credit strength and that each has had a reasonably equal experience. Several of the less frequently used ratios, however, dispute this assumption, and hence the index figure becomes of importance as it relates all of these indicators and combines them into one figure which measures the whole trend rather than one element of it. This index for the two companies is tabulated below.

Index	Company A	Company B
First	98.55	102.20
Second	104.65	99.95
Third	112.35	98.30
Fourth	113.20	92.70
Fifth	115.35	84.35

To emphasize the greater credit security of an index figure than the record of a current ratio, this index and the current ratio have been charted together so that their movements may be noted. There is no real question, when all factors are considered, that Company A has substantially

Index and Current Ratio

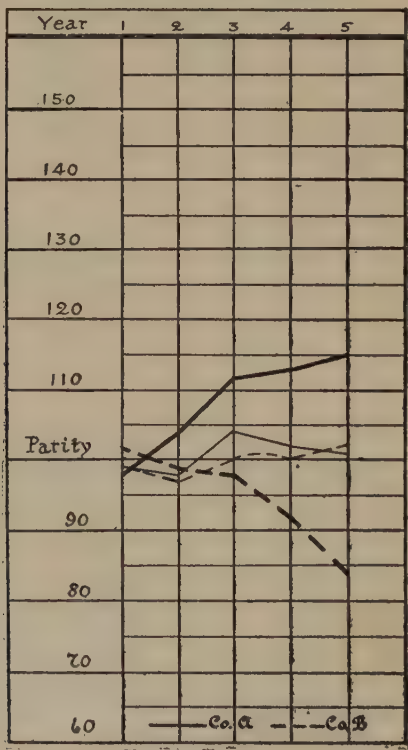


Chart No. 7

improved its position and that Company B has lost strength.

This hypothetical case was designed to show the dangers of partial analysis of figure facts. Actual cases follow in which a complete analysis has been used to forewarn creditors of unsafe underlying conditions.

Specimen Analysis No. 2

Data Submitted by Company

	First year	Second year	Third year	Fourth year	Fifth year
Cash	2,166,261	2,813,540	2,014,018	2,130,786	2,037,888
Receivables	6,943,941	7,915,602	7,175,272	5,097,109	6,587,152
Inventory	18,866,325	10,077,535	5,631,312	6,721,939	4,864,405
Listed securities	931,103	121,665	140,343	112,844	
Total current	28,907,630	20,928,342	14,960,945	14,062,678	13,489,445
Plant and equipment	11,726,020	11,569,216	11,934,993	16,647,685	17,063,324
Miscellaneous	2,306,583	5,799,565	6,918,667	8,664,668	9,913,614
Total fixed	14,032,603	17,368,781	18,853,660	25,312,353	26,976,938
Total	42,940,233	38,297,123	33,814,605	39,375,031	40,466,383
Payables	11,914,036	9,203,675	3,992,260	5,802,106	7,402,964
Taxes	1,112,769				
Miscellaneous	142,087	149,133	182,262	268,203	258,380
Total current	13,168,892	9,352,808	4,174,522	6,070,309	7,661,344
Funded	14,958,562	14,901,216	18,676,398	18,032,551	17,111,945
Total debt	28,127,454	24,254,024	22,850,920	24,102,860	24,773,289
Reserves		834,220	1,304,039	1,384,105	1,253,737
Net worth	14,812,779	13,208,879	9,659,646	13,888,066	14,439,357
Total	42,940,233	38,197,123	33,814,605	39,375,031	40,466,383
Sales	148,000,000	129,500,000	92,500,000	83,250,000	101,750,000
Current assets	28,907,630	20,928,342	14,960,945	14,062,678	13,489,445
Current liabilities	13,168,892	9,352,808	4,174,522	6,070,309	7,661,344
Excess	15,738,738	11,575,534	10,786,423	7,992,369	5,828,101
Current ratio	219	223	358	231	176

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.05	5.36	7.35	5.79	5.96	5.39	5.40	7.69	5.04	4.74
Receivables	16.17	27.08	20.67	28.25	21.22	29.25	12.95	19.48	16.28	19.59
Merchandise	43.94	37.57	26.31	29.41	16.65	21.83	17.07	21.48	12.32	22.99
Listed securities	2.16	1.43	.32	.65	.41	.74	.29	1.82		1.46
Miscellaneous		.34		.13		.06		.08		.23
Total current	67.32	71.78	54.65	64.23	44.24	57.27	35.71	50.55	33.34	49.01
Total fixed	32.68	28.22	45.35	35.77	55.76	42.73	64.29	49.45	66.66	50.99
Total—less G. W.	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	27.75	36.97	24.03	30.80	11.81	21.73	14.74	15.01	18.29	15.21
Taxes	2.59	.07		.05		.07		.08		.07
Miscellaneous	.33	.19	.39	.61	.53	.29	.67	.22	.64	.22
Total current	30.67	37.23	24.42	31.46	12.34	22.09	15.41	15.31	18.93	15.50
Funded debt	34.84	15.93	38.91	20.53	55.23	26.66	45.80	26.82	42.29	27.49
Total debt	65.51	53.16	63.33	51.99	67.57	48.75	61.21	42.13	61.22	42.99
Reserves		1.57	2.18	1.70	3.86	1.59	3.52	1.70	3.10	1.76
Net worth—less G. W.	34.49	45.27	34.49	46.31	28.57	49.66	35.27	56.17	35.68	55.25
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	344.67	259.54	338.15	224.57	273.55	182.11	211.43	203.95	251.44	210.71

Ratios

Current	219	187	223	194	358	233	231	298	176	274
Mdse.-rec.	271	164	127	80	78	83	132	126	73	139
Worth-fixed	105	168	76	135	51	136	54	119	53	128
Worth-debt	53	74	54	90	42	106	57	148	58	145
Sales-rec.	2,131	1,092	1,636	1,081	1,289	1,037	1,633	1,280	1,544	2,141
Sales-mdse.	784	681	1,285	819	1,642	899	1,238	950	2,091	1,119
Sales-fixed	1,054	1,026	745	767	490	536	329	505	377	508
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Current	25	115	28.75	113	28.25	135	33.75	77	19.25	64	16.00
Mdse.-rec.		140		137		94		105		52	
Worth-fixed	15	63	9.45	56	8.40	37	5.55	45	6.75	41	6.15
Worth-debt	25	71	17.75	60	15.	39	9.75	38	9.50	40	10.
Sales-rec.	10	149	14.90	134	13.40	120	12.	122	12.20	72	7.20
Sales-mdse.	10	113	11.30	137	13.70	145	14.50	124	12.40	147	14.70
Sales-fixed	10	102	10.20	97	9.70	91	9.10	65	6.50	74	7.40
Sales-worth	5	128	6.40	149	7.45	157	7.85	124	6.20	136	6.80
Index	100		98.75		95.90		92.50		72.80		68.25

Specimen Analysis No. 2

In this specimen the analysis of an actual case is presented. The figures as listed will not be found on any balance sheet, as in all instances the dollar figures are a percentage of the real figures. This is done for two purposes; first as a matter of actual identity to the casual reader, second so as to keep these sample statements of an approximately equal size. This method of taking 65 per cent, 25 per cent or 160 per cent of the real figures does not distort their proportions and hence the adjusted statements reflect all the problems of set-up, soundness, or dislocation quite as clearly as the original figures.

The first exhibit consists of five statements reported in dollars and the sales figure for each year. This is the original data submitted by the company. To this the writers have added the usual three lines showing current assets, current liabilities, and excess current assets or working capital, and have computed the current ratio. This is about as a comparison sheet would stand in the majority of bank credit departments.

It will be noted that the current ratio was consistently above 200 per cent, or 2 for 1, for the first four years. The name was well regarded in credit circles and its paper bought during this four-year period with great confidence. It is the writers' opinion that, outside of the management, there was little but confidence as to its standing. With a current ratio starting at 219 per cent, going up to 223 per cent and 358 per cent, and then falling to 231 per cent, it occurred to almost no one to question the liquidity of the company's position.

This was especially true of those who read the current ratio without any technical trade background. The writers were called upon for a technical analysis of the figure facts and were in a slightly different position from many buying

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.05	5.36	7.35	5.79	5.96	5.39	5.40	7.69	5.04	4.74
Receivables	16.17	27.08	20.67	28.25	21.22	29.25	12.95	19.48	16.28	19.59
Merchandise	43.94	37.57	26.31	29.41	16.65	21.83	17.07	21.48	12.02	22.99
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Worth-debt	25	71	17.75	60	15.	39	9.75	38	9.50	40	10.
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banks in that they at once set this current ratio against what their statistical work for the Robert Morris Associates had led them to expect as typical of the industry. A tabulation of this comparison is here given:

CURRENT RATIO

Year	Typical ratio	Subject	Rel. subj. to type
First...........	187	219	115
Second.........	194	223	113
Third..........	233	358	135
Fourth.........	298	231	77
Fifth..........	274	176	64

The analysis was written following the fourth year, but the fifth is added, as it only seems to prove the opinions previously expressed.

The average bank analyst having or using only mental reservations felt no particular alarm at the current ratio of the fourth statement. It was well above the average conception of what is sufficient. In fact it was 115 per cent of parity to 200 per cent or, 2 for 1. What these analysts did not realize was that the tendency in this industry was to become more liquid and toward a higher current ratio. For the third and fourth years it was more typical for the current ratio in this industry to be substantially above 200 per cent, and in the fourth year it approximated 300 per cent. As a matter of cold statistics the current ratio of this company was not high the fourth year, but had fallen to 77 per cent of parity to what one should expect. The very year that it became typical for the industry, through its liquidity, to reflect high current ratios, this company made a sharp decline. This seemed strange in view of its general standing.

WORTH TO DEBT

Following the firm conviction that the current ratio is often window dressed to show 200 per cent or better, and

100 Per Cent Statements

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believing quite as firmly that the debt position is every bit as important as the current position, the writers next examined the worth to debt ratio, again in relation to those figures they had worked out for the Robert Morris Associates as being typical for this particular industry. A tabulation of this comparison is illuminating:

Year	Typical ratio	Subject	Rel. subj. to type
First...........	74	53	71
Second.........	90	54	60
Third..........	106	42	39
Fourth.........	148	57	38
Fifth..........	145	58	40

It is noted at once that the industry seems to be increasing the amount of owned capital in its relation to borrowed capital, but that the subject is barely holding its own. As a result the subject is competitively under a heavier overhead. When capital at use is owned, dividends can be curtailed in time of stress. But when capital supply comes from bonding operations, interest must be continued to prevent foreclosure.

If the company's funded debt position had been normal in the fourth year and if the group statement be manipulated to this position as an experiment, one would note some rather startling peculiarities. On the 100 per cent statement the company shows funded debts of 45.80 per cent and the group 26.82 per cent. The group is 18.98 points less than the subject. This means that if the industry had funded up to the subject it could have wiped out all of its current debt, have had 3.67 per cent to add to cash, and had a current ratio of infinity. This is, of course, only a casual comment in passing to stress the overexpanded funded debt position of the subject. Those analysts who did not have, or, having, did not use typical figures instead of inaccurate mental reservations, could easily have over-

100 Per Cent Statements

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looked this feature and gone on, as many did, relying on a current ratio over 200 per cent.

WORTH TO FIXED

This is a manufacturing industry needing large investment in plants. The relative ownership of these plants makes an interesting comparison.

Year	Typical ratio	Subject	Rel. subj. to type
First...........	168	105	63
Second.........	135	76	56
Third..........	136	51	37
Fourth.........	119	54	45
Fifth..........	128	53	41

The subject at no time actually owned its plants after the first year. In this year only was the net worth sufficient to buy them. They were chattels of the creditors run by the management in an effort to make profits and possibly with the idea of earning out. This possibility was quite distant in the fourth year when the net worth was only 54 per cent of the fixed assets.

SALES TO FIXED

As the plant was creditor owned and from the 100 per cent statement overexpanded, showing in the fourth year as 64.29 per cent of all assets as compared with 49.55 per cent for the industry, the matter of its resultant sales was highly important. A comparative tabulation follows:

Year	Typical ratio	Subject	Subj. rel. to type
First...........	1026	1054	102
Second.........	767	745	97
Third..........	536	490	91
Fourth.........	505	329	65
Fifth..........	508	377	74

Only in the first year is the subject up to parity. In the fourth year it has fallen to 65 per cent of trade parity.

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Mdse.-rec.		140		137		94		105		52	
Worth-fixed	15	63	9.45	56	8.40	37	5.55	45	6.75	41	6.15
Worth-debt	25	71	17.75	60	15.	39	9.75	38	9.50	40	10.
Sales-rec.	10	149	14.90	134	13.40	120	12.	122	12.20	72	7.20
Sales-mdse.	10	113	11.30	137	13.70	145	14.50	124	12.40	147	14.70
Sales-fixed	10	102	10.20	97	9.70	91	9.10	65	6.50	74	7.40
Sales-worth	5	128	6.40	149	7.45	157	7.85	124	6.20	136	6.80
Index	100		98.75		95.90		92.50		72.80		68.25

There is only one logical deduction to make from the last three tables. The company has expanded its fixed investment too rapidly and is overinvested in plants, and at the same time top-heavy with debt. These plants are not accompanied by a reasonable sales productivity and the company has solidified its own capital to a dangerous extent quite beside the position of its current ratio. The current ratio is not a safe measure because funding operations have window dressed it to the casual observer.

SALES MERCHANDISE AND SALES RECEIVABLE RATIOS

The ratio of sales to merchandise and sales to receivables are good for all of the first four years. In fact, their contrast to the other ratios suggests that the company is a fabricating and selling machine without either ability or inclination to financial soundness. Momentum carried it along after the expansion period, and it lived on velocity. The writers like to believe that the management recognized the dangers and that, given an opportunity, they would have preferred a better financing set-up. But the fact remains that, with the available data as here given, the name sold on the open market freely until some time after the fourth statement and carried very low rates. It was considered "good," not a "good second."

THE INDEX APPLIED

As a matter of actual fact, the writers did not prepare the separate tables as have been displayed here. They prepared an index, as has been explained in this text, and drew their conclusions broadly from it. The detailed tabular method is used in this writing in the belief that it will be more readily understandable to those who have not become familiar with the index formula.

As a matter of convenience the index figure and the current ratio will be tabulated for quick and easy comparison,

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.05	5.36	7.35	5.79	5.96	5.39	5.40	7.69	5.04	4.74
Receivables	16.17	27.08	20.67	28.25	21.22	29.25	12.95	19.48	16.28	19.59
Merchandise	43.94	37.57	26.31	29.41	16.65	21.83	17.07	21.48	12.02	22.99
Listed securities	2.16	1.43	.32	.65	.41	.74	.29	1.82		1.46
Miscellaneous		.34		.13		.06		.08		.23
Total current	67.32	71.78	54.65	64.23	44.24	57.27	35.71	50.55	33.34	49.01
Total fixed	32.68	28.22	45.35	35.77	55.76	42.73	64.29	49.45	66.66	50.99
Total—less G. W.	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	27.75	36.97	24.03	30.80	11.81	21.73	14.74	15.01	18.29	15.21
Taxes	2.59	.07		.05		.07		.08		.07
Miscellaneous	.33	.19	.39	.61	.53	.29	.67	.22	.64	.22
Total current	30.67	37.23	24.42	31.46	12.34	22.09	15.41	15.31	18.93	15.50
Funded debt	34.84	15.93	38.91	20.53	55.23	26.66	45.80	26.82	42.29	27.49
Total debt	65.51	53.16	63.33	51.99	67.57	48.75	61.21	42.13	61.22	42.99
Reserves		1.57	2.18	1.70	3.86	1.59	3.52	1.70	3.10	1.76
Net worth—less G. W.	34.49	45.27	34.49	46.31	28.57	49.66	35.27	56.17	35.68	55.25
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	344.67	259.54	338.15	224.57	273.55	182.11	211.43	203.95	251.44	210.71

Ratios

Current	219	187	223	194	358	233	231	298	176	274
Mdse.-rec.	271	164	127	80	78	83	132	126	73	139
Worth-fixed	105	168	76	135	51	136	54	119	53	128
Worth-debt	53	74	54	90	42	106	57	148	58	145
Sales-rec.	2,131	1,092	1,636	1,081	1,289	1,037	1,633	1,280	1,544	2,141
Sales-mdse.	784	681	1,285	819	1,642	899	1,238	950	2,091	1,119
Sales-fixed	1,054	1,026	745	767	490	536	329	505	377	508
Sales-worth	999	726	980	503	957	414	599	457	704	452

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	115	28.75	113	28.25	135	33.75	77	19.25	64	16.00
Mdse.-rec.		140		137		94		105		52	
Worth-fixed	15	63	9.45	56	8.40	37	5.55	45	6.75	41	6,15
Worth-debt	25	71	17.75	60	15.	39	9.75	38	9.50	40	10.
Sales-rec.	10	149	14.90	134	13.40	120	12.	122	12.20	72	7.20
Sales-mdse.	10	113	11.30	137	13.70	145	14.50	124	12.40	147	14.70
Sales-fixed	10	102	10.20	97	9.70	91	9.10	65	6.50	74	7.40
Sales-worth	5	128	6.40	149	7.45	157	7.85	124	6.20	136	6.80
Index	100		98.75		95.90		92.50		72.80		68.25

together with the current ratio and its relation to the typical ratio for the industry.

Year	Co. ratio	Typical ratio	Relation	Index
First.........	219	187	115	98
Second.......	223	194	113	95
Third........	358	233	135	92
Fourth.......	231	298	77	72
Fifth.........	176	274	64	68

While the current ratio remains above 200 per cent for the first four years, it is below parity in the fourth year. The index starts almost at parity but in spite of the good current ratio goes steadily and in the fourth year drastically downward. This is because of the other proportions not so generally taken into active consideration.

After the fourth year and after four declines and when the index fell below 75 per cent, the writers offered the opinion that only drastic refinancing could save the situation. Nevertheless, the name sold until after the fifth statement, when a refinancing had to be effected. This was evidently advisable after the third decline and necessary after the fourth. At either of these periods it could have been accomplished easier with the high current ratio showing than when the fifth current ratio became public knowledge.

Specimen Analysis No. 3

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year	Cross-footed period statement
Cash	32,664	32,556	23,269	34,957	123,446
Receivables	362,711	511,877	468,363	478,865	1,821,806
Inventory	610,962	716,172	1,055,865	1,088,425	3,471,424
Misc.		5,069	105	1,114	6,298
Total current	1,006,337	1,265,674	1,547,602	1,603,361	5,422,974
Plant and equipment	25,807	35,016	41,211	39,420	141,454
Misc.	8,340	5,376	8,650	9,886	32,252
Total fixed	34,147	40,392	49,861	49,306	173,706
Total	1,040,484	1,306,066	1,597,463	1,652,667	5,596,680
Payables	526,554	699,755	890,875	974,091	3,091,275
Misc.			1,539		1,539
Total current	526,554	699,755	892,414	974,091	3,092,814
Total debt	526,554	699,755	892,414	974,091	3,092,814
Net worth	513,930	606,311	705,049	678,576	2,503,866
Total	1,040,484	1,306,066	1,597,463	1,652,667	5,596,680
Sales		2,491,935	2,935,079	2,531,640	10,598,206

100 Per Cent Statement

	First year	Second year	Third year	Fourth year	Cross-footed period statement
	Co.	Co.	Co.	Co.	
Cash	3.14	2.49	1.46	2.12	2.21
Receivables	34.86	39.19	29.32	28.97	32.55
Merchandise	58.72	54.83	66.10	65.86	62.03
Listed Securities					
Misc.		.39		.07	.11
Total current	96.72	96.90	96.88	97.02	96.90
Total fixed	3.28	3.10	3.12	2.98	3.10
Total	100.00	100.00	100.00	100.00	100.00
Payables	50.61	53.58	55.77	58.94	55.23
Misc.			.09		.03
Total current	50.61	53.58	55.86	58.94	55.26
Total debt	50.61	53.58	55.86	58.94	55.26
Net worth	49.39	46.42	44.14	41.06	44.74
Total	100.00	100.00	100.00	100.00	100.00
Sales		190.80	183.11	153.19	189.37

Ratios

Current	191	181	173	164	175
Mdse-rec.	168	140	225	227	190
Worth-fixed	1,506	1,497	1,414	1,377	1,443
Worth-debt	97	86	79	69	81
Sales-rec.		487	624	528	581
Sales-mdse.		348	277	232	305
Sales-fixed		6,154	5,868	5,140	6,108
Sales-worth		411	414	373	423

Index

	Wt.	Rel.	Rel.	Value	Rel.	Value	Rel.	Value
Current	30	109	104	31.20	98	29.40	93	27.90
Mdse-rec.		88	73		116		117	
Worth-fixed		105	104		98		95	
Worth-debt	30	117	106	31.80	97	29.10	85	25.50
Sales-rec.	15		83	12.45	107	16.05	91	13.65
Sales-mdse.	15		113	16.95	91	13.65	76	11.40
Sales-fixed			101		96		84	
Sales-worth	10		97	9.70	98	9.80	88	8.80
	100	*		102.10		98.		87.25

*No sales available—No index developed.

Specimen Analysis No. 3

In the study of this company a comparison of its position each year to the average condition for the four years will be made. This is done by cross-footing the statements, which gives what is called a cross-footed period statement. It is considered more advisable to use this as a base rather than the statement of any separate year, because it is more likely to reflect an average condition. If a single year is used as a base, there is the danger of the base being too high or too low, depending on whether or not it is a good or bad year. Naturally if the last statement is used as a base and it is the best exhibit, then all other years will be lower than the base, and the index number would show worse than it really should. And conversely, if the first statement is the base and represents the poorest condition, then all other years look good in comparison. The statements are therefore cross-footed for the period and the ratios of the cross-footed period statement used as a base.

CURRENT RATIO

Abiding by the customary, if unreliable, test of credit strength, the current ratio is examined first. The base ratio or the ratio obtained from dividing the current assets by the current liabilities of the cross-footed period statement is 175, eleven points higher than the lowest and sixteen points lower than the highest ratio for this series of statements. In itself the base does not meet the 2 for 1 test, and inasmuch as the last statement is eleven points lower suggests this as the first weakness.

The current assets and current liabilities for the period run as follows on the 100 per cent statement.

100 Per Cent Statement

	First year	Second year	Third year	Fourth year	Cross-footed period statement
	Co.	Co.	Co.	Co.	
Cash	3.14	2.49	1.46	2.12	2.21
Receivables	34.86	39.19	29.32	28.97	32.55
Merchandise	58.72	54.83	66.10	65.86	62.03
Listed Securities					
Misc.		.39		.07	.11
Total current	96.72	96.90	96.88	97.02	96.90
Total fixed	3.28	3.10	3.12	2.98	3.10
Total	100.00	100.00	100.00	100.00	100.00
Payables	50.61	53.58	55.77	58.94	55.23
Misc.			.09		.03
Total current	50.61	53.58	55.86	58.94	55.26
Total debt	50.61	53.58	55.86	58.94	55.26
Net worth	49.39	46.42	44.14	41.06	44.74
Total	100.00	100.00	100.00	100.00	100.00
Sales		190.80	183.11	153.19	189.37

Ratios

Current	191	181	173	164	175
Mdse-rec.	168	140	225	227	190
Worth-fixed	1,506	1,497	1,414	1,377	1,443
Worth-debt	97	86	79	69	81
Sales-rec.		487	624	528	581
Sales-mdse.		348	277	232	305
Sales-fixed		6,154	5,868	5,140	6,108
Sales-worth		411	414	373	423

Index

	Wt.	Rel.	Rel.	Value	Rel.	Value	Rel.	Value
Current	30	109	104	31.20	98	29.40	93	27.90
Mdse-rec.		88	73		116		117	
Worth-fixed		105	104		98		95	
Worth-debt	30	117	106	31.80	97	29.10	85	25.50
Sales-rec.	15		83	12.45	107	16.05	91	13.65
Sales-mdse.	15		113	16.95	91	13.65	76	11.40
Sales-fixed			101		96		84	
Sales-worth	10		97	9.70	98	9.80	88	8.80
	100	*		102.10		98.		87.25

*No sales available—No index developed.

Year	Current assets	Current liabilities
First	96.72	50.61
Second	96.90	53.58
Third	96.88	55.86
Fourth	97.02	58.94
Cross-footed period statement	96.90	55.26

Practically all of the company's assets are of a current nature. These are carried by heavy borrowings from the bank, trade, or through paper brokers. When further analysis of the make-up of the current assets in relation to the current liabilities is made, it is found that at no time does the company pass the acid test—cash and receivables to the current debt. This acid test is as follows:

Year	Cash and receivables	Current liabilities
First	38.00	50.61
Second	41.68	53.58
Third	30.78	55.86
Fourth	31.09	58.94
Cross-footed Period statement	34.76	55.26

The unusually high percentage of merchandise is subject to some question. When a company carries $62.03 out of every $100 as an average for the period and we find such a heavy percentage of current debt, it is quite fair to question whether or not the large inventory is justified. It seems quite likely that the company has a lot of dead merchandise on its shelves, especially since this business is in a wholesale line, where the merchandise turnover as measured by the sales to merchandise ratio, is 400 per cent, or four times per year. The company's ratios of 348, 277, 232 and an average of 305 indicates this company is a complete turnover slower than the group. To justify such a large inventory there should be a speeding up of sales. To summarize briefly this condition, there is a large inventory situation not supported by sufficient sales to justify it, and this in-

100 Per Cent Statement

	First year	Second year	Third year	Fourth year	Cross-footed period statement
	Co.	Co.	Co.	Co.	
Cash	3.14	2.49	1.46	2.12	2.21
Receivables	34.86	39.19	29.32	28.97	32.55
Merchandise	58.72	54.83	66.10	65.86	62.03
Listed Securities					
Misc.		.39		.07	.11
Total current	96.72	96.90	96.88	97.02	96.90
Total fixed	3.28	3.10	3.12	2.98	3.10
Total	100.00	100.00	100.00	100.00	100.00
Payables	50.61	53.58	55.77	58.94	55.23
Misc.			.09		.03
Total current	50.61	53.58	55.86	58.94	55.26
Total debt	50.61	53.58	55.86	58.94	55.26
Net worth	49.39	46.42	44.14	41.06	44.74
Total	100.00	100.00	100.00	100.00	100.00
Sales		190.80	183.11	153.19	189.37

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Current	191	181	173	164	175
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Index

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Current	30	109	104	31.20	98	29.40	93	27.90
Mdse-rec.		88	73		116		117	
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Worth-debt	30	117	106	31.80	97	29.10	85	25.50
Sales-rec.	15		83	12.45	107	16.05	91	13.65
Sales-mdse.	15		113	16.95	91	13.65	76	11.40
Sales-fixed			101		96		84	
Sales-worth	10		97	9.70	98	9.80	88	8.80
	100	*		102.10		98.		87.25

*No sales available—No index developed.

ventory in turn is being carried by creditors to a great extent—not a very good condition.

WORTH-DEBT RATIO

This ratio emphasizes the poor condition of the company, the owners of the business providing less of the capital at use than are the creditors. Only on the first statement is it nearly a 50-50 proposition. As will be shown later, this is not customary for this type of business. In any event it is not a good condition for the creditors when the debts exceed the net worth. An average relationship of 81 and the ratio in the last year of 69 is a decidedly poor showing. As previous comments indicated, these borrowings are current, and probably a substantial part of them are used to carry inventory which is not moving fast enough. Unless something is done to remedy this over-inventoried and top-heavy debt condition, the banks having this account are going to find themselves in a mercantile business.

WORTH-FIXED AND SALES-FIXED RATIOS

No weight has been attached to these ratios because of the extremely small percentage of capital which is tied up in fixed assets. The dollars per $100 of total assets runs from a high in the first year of $3.28 to a low in the fourth year of $2.98. If these ratios were used in the computation they would raise the index number, and carry more weight than the percentage of investment indicates they should. The weights usually assigned to these ratios have been added to the other ratios, the total weights still footing 100.

This extremely low fixed investment, in a trading industry requiring large warehouse facilities, prompts the suggestion that the analyst should secure full information on rents paid. One of two contingencies may become evident. First, the management may own the buildings and be receiving excessive rents. Second, the rent payments capital-

100 Per Cent Statement

	First year	Second year	Third year	Fourth year	Cross-footed period statement
	Co.	Co.	Co.	Co.	
Cash	3.14	2.49	1.46	2.12	2.21
Receivables	34.86	39.19	29.32	28.97	32.55
Merchandise	58.72	54.83	66.10	65.86	62.03
Listed Securities					
Misc.		.39		.07	.11
Total current	96.72	96.90	96.88	97.02	96.90
Total fixed	3.28	3.10	3.12	2.98	3.10
Total	100.00	100.00	100.00	100.00	100.00
Payables	50.61	53.58	55.77	58.94	55.23
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Worth-debt	30	117	106	31.80	97	29.10	85	25.50
Sales-rec.	15		83	12.45	107	16.05	91	13.65
Sales-mdse.	15		113	16.95	91	13.65	76	11.40
Sales-fixed			101		96		84	
Sales-worth	10		97	9.70	98	9.80	88	8.80
	100	*		102.10		98.		87.25

*No sales available—No index developed.

ized on a 10-per-cent basis may indicate a potential excessive fixed investment.

SALES RECEIVABLES RATIO

The sales figure for the cross-footed statement has been developed by adding the sales for the three years and multiplying the result by four-thirds. Another way to compute the sales ratios would have been to add the sales for the three years and cross foot the statements for the same years, using the ratios from the resulting statement as a base. The first method, however, is sufficiently accurate for purposes of this general analysis.

The 100 per cent statement for the last year shows that the receivables are a smaller percentage of the total footings than on any other statement in this series. If the sales are kept up, this, of course, would show up as a faster turnover in the sales-receivables ratio. However, the sales percentages on the 100 per cent statement show a drop from 183.11 to 153.19 during the past two years, and a drop off in the dollar sales of nearly $400,000 against an increase in dollar receivables of about $10,000. This condition is reflected in the drop in this ratio of nearly 100 points or one whole turnover from 624 to 528. More receivables and less sales indicates a weakness in collections.

SALES MERCHANDISE RATIO

Sufficient comments were made in the discussion of the current ratio to call attention to the weakness here. Referring to the dollar figures, an increase of $33,000 is noted in merchandise in the last year, while the sales have fallen $400,000. A turnover of 232 per cent, or once in every 158 days, for this industry is far too low, and the company should be asked whether this is due to speculation in inventory or the holding of unsalable stock. It might be a good policy for this company to put on a big sale, taking losses,

100 Per Cent Statement

	First year	Second year	Third year	Fourth year	Cross-footed period statement
	Co.	Co.	Co.	Co.	
Cash	3.14	2.49	1.46	2.12	2.21
Receivables	34.86	39.19	29.32	28.97	32.55
Merchandise	58.72	54.83	66.10	65.86	62.03
Listed Securities					
Misc.		.39		.07	.11
Total current	96.72	96.90	96.88	97.02	96.90
Total fixed	3.28	3.10	3.12	2.98	3.10
Total	100.00	100.00	100.00	100.00	100.00
Payables	50.61	53.58	55.77	58.94	55.23
Misc.			.09		.03
Total current	50.61	53.58	55.86	58.94	55.26
Total debt	50.61	53.58	55.86	58.94	55.26
Net worth	49.39	46.42	44.14	41.06	44.74
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Sales-rec.	15		83	12.45	107	16.05	91	13.65
Sales-mdse.	15		113	16.95	91	13.65	76	11.40
Sales-fixed			101		96		84	
Sales-worth	10		97	9.70	98	9.80	88	8.80
	100	*		102.10		98.		87.25

*No sales available—No index developed.

if necessary, in order to clean up their shelves, and use the funds received to liquidate some of their current obligations.

SALES WORTH RATIO

The activity of the owned capital as reflected by this ratio seems sufficiently high. However, very little importance should be placed in this because the activity of the net worth is due to the small percentage of net worth, the under-capitalized condition rather than the volume of sales. A small net worth naturally should turn more often, so very little reliance should be placed in this ratio. It may even indicate overtrading with the company operating on other than owned capital. If all goes well it is good for the owners because they reap the profit. If it does not go so well the creditors take the business and the bigger losses. It may indicate a business gamble for the banks.

COMPARISON OF COMPANY TO THE INDUSTRY

The first section of the analysis of this company was devoted to measuring the company against its own average position, and it was discovered that it was only 87.25 per cent of parity the last year. This section will be devoted to the analysis of the company for the past three years against the group figures for the industry in which the company operates. The company is located in a fairly good sized town east of the Mississippi River, so is reasonably accessible to sources of supply and should have a ready market for its merchandise.

The last two years there are 89 and 98 statements used in the compilation of the data making up the selected ratios and type 100 per cent statements, so that the base figures are fairly representative of the industry. To many students such an elaborate analysis of a company, which is to them obviously in a very bad condition, seems unnecessary. But inasmuch as this series of analyses is developed partly for

100 Per Cent Statement

	Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group
Cash	2.49	5.10	1.46	5.70	2.12	6.28
Receivables	39.19	39.92	29.32	38.03	28.97	39.27
Merchandise	54.83	38.41	66.10	43.90	65.86	38.89
Listed securities		.11		.23		.07
Misc.	.39	.23		.81	.07	.47
Total current	96.90	83.77	96.88	88.67	97.02	84.98
Total fixed	3.10	16.23	3.12	11.33	2.98	15.02
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	53.58	33.57	55.77	37.42	58.94	27.01
Taxes		.36		.80		.68
Misc.		2.01	.09	2.03		2.39
Total current	53.58	35.94	55.86	40.25	58.94	30.08
Funded debt		3.09		.78		3.83
Total debt	53.58	39.03	55.86	41.03	58.94	33.91
Reserves		.59		.94		.67
Net worth	46.42	60.38	44.14	58.03	41.06	65.42
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	190.80	187.21	183.11	195.12	153.19	180.88

Ratios

Current	181	218	173	219	164	248
Mdse-rec.	140	102	225	113	227	93
Worth-fixed	1,497	443	1,414	642	1,377	463
Worth-debt	86	137	79	134	69	170
Sales-rec.	487	461	624	524	528	449
Sales-mdse.	348	476	277	394	232	412
Sales-fixed	6,154	1,595	5,868	2,361	5,140	1,320
Sales-worth	411	348	414	293	373	261

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value
Current	30	83	24.90	79	23.70	66	19.80
Mdse-rec.		127		150		159	
Worth-fixed		171		155		167	
Worth-debt	30	62	18.60	59	17.70	40	12.
Sales-rec.	15	106	15.90	116	17.40	115	17.25
Sales-mdse.	15	73	10.95	70	10.50	56	8.40
Sales-fixed		174		160		175	
Sales-worth	10	116	11.60	130	13.	130	13.
	100		81.95		82.30		70.45

beginners in analysis as well as those more experienced, and as it is the object of the authors to show as many methods of determining the trend of a company's financial condition as possible, the following criticism is submitted. Also bear in mind the fact that these analyses, unless otherwise stated, are made up from figures actually submitted to banks or brokerage houses, so it would seem in every case that the dollar figures as analyzed by the credit department were not sufficient to pass judgment on the goodness of a loan without some ratio analysis in addition. Certainly dollar-figure analysts having this account have not sized up the situation so far as known, or at least have not made any constructive suggestions.

CASH POSITION

The company is wofully weak in its cash position when compared with the industry 100 per cent figures. To get a better picture the following tabulation of the cash item and its relation to current debts is presented:

	Cash		Current Debt		Cash to Current Debt	
Year	Co.	Group	Co.	Group	Co.	Group
Second...	2.49	5.10	53.58	35.94	4.64	14.19
Third....	1.46	5.70	55.86	40.25	2.61	14.15
Fourth...	2.12	6.28	58.94	30.08	3.59	20.87

The above table indicates how poorly this company compares to the group. While it is true that businesses generally do not keep deposits of 20 per cent with their banks, certainly we should expect more than 2.61 to 4.64 per cent, when other companies in the same line show 14.15 to 20.87 per cent of cash to current obligations.

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	Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group
Cash	2.49	5.10	1.46	5.70	2.12	6.28
Receivables	39.19	39.92	29.32	38.03	28.97	39.27
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ACID TEST

Cash and Receivables to Current Liabilities

	Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group
Cash..........	2.49	5.10	1.46	5.70	2.12	6.28
Receivables.....	39.19	39.92	29.32	38.03	28.97	39.27
Total......	41.68	45.02	30.78	43.73	31.09	45.55
Current liabilities	53.58	35.94	55.86	40.25	58.94	30.08
Ratio........	77	125	55	108	53	151

This table emphasizes the weakness of the company's current position as found in the current ratio.

CURRENT RATIO

Year	Co.	Group	Relation
Second........	181	218	83
Third.........	173	219	79
Fourth........	164	248	66

The above tabulation of the current ratio for the company and group, together with the relation, shows quite clearly that the company not only has become worse in its current ratio, but that in addition the industry has gotten better, so that the gap between the company and group has steadily widened. While the individual company has a greater percentage of assets of a current nature than the group, the company also has a far greater percentage of debt. On the last statement the company's current assets are $12 higher than the group per $100 of total footings, or about 14 per cent, while the liabilities are about $29, or nearly twice as much as the group. A current ratio of only 164 should cause one to question the reason without any industry figures for comparison, but such figures assist materially in substantiating one's belief in its weakness.

This weakness is particularly emphasized when the analyst stops to consider the very slight amount of fixed investment which allows of the almost complete investment of net worth in current assets.

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	Co.	Group	Co.	Group	Co.	Group
Cash	2.49	5.10	1.46	5.70	2.12	6.28
Receivables	39.19	39.92	29.32	38.03	28.97	39.27
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MERCHANDISE-RECEIVABLES RATIO

Because of the company's high percentage of inventory, this ratio is very much in excess of the group. Justification for this inventory is looked for in the merchandise turnover as reflected by the sales-merchandise ratio. The following comparison indicates no such justification for the large investment in merchandise.

Year	Co.	Group	Relation
Second........	348	476	73
Third.........	277	394	70
Fourth........	232	412	56

The last year the company only turns its merchandise 56 per cent as rapidly as the group. While it is true that the sales per $100 of total footings is much less for the individual which would, of course, lower the ratio, the real trouble lies in the large quantity of merchandise. It is suggested here that the company liquidate their inventory for as much as possible and pay off current obligations with the proceeds. Probably a part of the merchandise is unsalable, but the unsalable stock certainly should not be included as part of the inventory. Ninety per cent of the inventory is being carried by creditors. A loss has been sustained in the net-worth percentage on the 100 per cent statement from 46.42 to 41.06. Profit and loss figures, or the surplus reconcilement, are not available which would help account for the increase of $72,000 during the past two years in net worth, but it is reasonable to inquire if the inventory were written down to salable value, whether or not there would have been any increase in net worth, unless due to additional capital put into the business.

The inventory situation suggests a series of objective suggestions. If the company were to reduce its merchandise to that percentage of its total assets held as merchandise in

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the group statement, it should carry $423,288 in inventory. The sales to merchandise ratio would then be 598 per cent.

Such a reduction of inventory would release $665,137, which could be applied against current debt. This would leave current assets of $938,224 and current liabilities of $308,954, with a current ratio of 303 per cent.

These two proportions would then be better than the selected figures by good margins. If such a financing were attempted, it would probably be discovered that no such reduction could be effected, as there is undoubtedly too great an amount of slow-moving merchandise, much of which may be obsolete. But some such trend should be inaugurated if this company is to be brought into line and into a strong position.

WORTH-FIXED AND SALES-FIXED RATIOS

The same comments apply in this analysis against the group figures as were made when the company was measured against itself. The small investment in fixed assets makes the value of these ratios unimportant in analysis. The company probably rents its buildings, so some adjustment should be made for this rent item, capitalizing the expense of rent at the usual 10 per cent. The group figures, of course, are made up of those companies owning their buildings and those renting, so rather than capitalize the rent at 10 per cent the fixed ratios are omitted in this series of index numbers.

WORTH DEBT RATIO

Undercapitalization is more obvious in this analysis than in the previous one. Here the relation of the company's ratio to the group runs 62, 59, and 40. Forty per cent of parity is decidedly poor, and if at all possible additional capital should be supplied. Whether or not outside capital could be induced to come into the business is questionable, but a suggestion is offered that the attempt be made, using the capital to retire the current obligations, thus

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strengthening the position of the creditors. This together with the funds received from an inventory liquidation would naturally strengthen the company as a credit risk.

If the inventory adjustment just mentioned were effected, this worth-debt ratio would be 219 per cent, or considerably above the group or selected figure.

SALES-RECEIVABLE RATIO

This company has less receivables per $100 of total footings than the group, sufficiently less to make up for substantially less sales. Receivables turnover is, therefore, higher than the group. No additional comments need to be made on this ratio.

SALES-MERCHANDISE RATIO

Previous comments on the make-up of current assets under the merchandise to receivables ratio are sufficient to point out the weaknesses here.

SALES WORTH

The company shows a more rapid turnover of net worth than is shown by the group. Although sales for the company are lower than the 100 per cent group figures, the small percentage of net worth more than offsets the reduced sales volume.

SUMMARY

1. Very poor cash and cash receivables to current liabilities position.
2. An overinventoried situation, calling for substantial liquidation.
3. A frightfully weak worth debt or owned to borrowed capital position which indicates a need for an additional supply of capital by the owners.
4. This is almost entirely an inventory dislocation. It

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may be a poorly selected and unbalanced inventory. It may be an inventory speculation. If it is not adjusted or corrected the banker creditors are on the verge of becoming merchants.

THE EFFECT OF CHANGING THE WEIGHTS

The following explanation and tabulation are given to show that the changing of weights used to develop the index number, if varied within reason, will change the size of the index number but not the general trend. If the index numbers were plotted on a chart, the lines would be higher or lower, but their direction would be the same.

The relation column is the same as that used for developing the index number based on the cross-footed figures. In this discussion weight will be given to the ratios involving the fixed assets in order to satisfy those who think that the percentage of fixed assets has nothing to do with whether or not they are used in analysis. The argument is that if only a small part of the capital is tied up in fixed assets the company is in so much more liquid position.

INDEX

Ratio	Wt.	Rel.	Value	Rel.	Value	Rel.	Value
Current.......	25	104	26.00	98	24.50	93	23.25
Mdse.—rec....		73		116		117	
Worth—fixed..	15	104	15.60	98	14.70	95	14.25
Worth—debt..	25	106	26.50	97	24.25	85	21.25
Sales—rec.....	10	83	8.30	107	10.70	91	9.10
Sales—mdse...	10	113	11.30	91	9.10	76	7.60
Sales—fixed...	10	101	10.10	96	9.60	84	8.40
Sales—worth..	5	97	4.85	98	4.90	88	4.40
	100		102.65		97.75		88.25

This shows the company at its very best. The index numbers using the first weights compared with the above are as follows:

Year	First series of weights	This series
Second	102.10	102.65
Third	98.00	97.75
Fourth	87.25	88.25

It is not the intent of the authors to leave the impression that they advocate the above weighting. However, it is a good illustration of the point that the weights can be changed quite radically without affecting the direction of the index number. The direction is still decidedly downward.

Specimen Analysis No. 4

Data Submitted by Company

	First statement	Second statement	Third statement	Fourth statement	Fifth statement	Cross-footed statement period
Cash	14,789	3,992	9,694	8,613	8,258	45,847
Receivables	126,003	109,960	156,994	109,631	124,183	626,772
Inventory	123,362	124,890	118,215	75,362	75,869	517,697
Listed sec.						
Misc.						
Total current	264,154	238,842	284,903	193,606	208,310	1,139,816
Plant and equipment	26,122	26,407	27,495	28,061	28,320	136,404
Misc.	14,581	12,491	10,053	5,117	2,849	45,092
Total fixed	40,703	38,898	37,548	33,178	31,169	181,496
Goodwill	118,274	126,410	122,810			367,494
[b]Total	304,857	277,740	322,451	226,784	239,479	1,371,312
Payables	183,061	116,072	196,399	127,383	129,293	752,210
Taxes						
Misc.	5,409	39,561		1,635		46,605
Total current	188,470	155,633	196,399	129,018	129,293	798,815
Total debt	188,470	155,633	196,399	129,018	129,293	798,815
Reserves	5,624	7,881	7,164	11,956	14,208	46,831
Capital stock	232,944	249,224	245,620	122,810	122,810	
Surplus	[c]3,907	[c]8,588	[c]3,922	[c]37,000	[c]26,832	
Net worth	110,763	114,226	118,888[a]	85,810	95,978	525,666
Total	304,857	277,740	322,451	226,784	239,479	1,371,312
Sales	787,678	385,240 }	766,440	577,496	{ 300,710	3,500,614
	Est. 1 yr.	770,000 }			{ 601,000	
Profit	28,886	[d]4,681	[d]11	[d]33,078	12,365	

[a]Details of capital and surplus not given.
[b]Less Goodwill
[c]Deficit
[d]Loss
The second and fifth statements are half-year statements.

100 Per Cent Statements

	First statement	Second statement	Third statement	Fourth statement	Fifth statement	Cross-footed period statement
	Co.	Co.	Co.	Co.	Co.	
Cash	4.85	1.44	3.01	3.80	3.45	3.03
Receivables	41.33	39.59	48.69	48.34	51.86	45.71
Inventory	40.47	44.97	36.66	33.23	31.68	37.75
Listed sec.						
Misc.						
Total current	86.65	86.	88.36	85.37	86.99	86.76
Total fixed	13.35	14.	11.64	14.63	13.01	13.24
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	60.05	41.79	60.91	56.17	53.99	54.85
Taxes						
Misc.	1.77	14.25		.72		3.40
Total current	61.82	56.04	60.91	56.89	53.99	58.25
Funded debt						
Total debt	61.82	56.04	60.91	56.89	53.99	58.25
Reserves	1.84	2.84	2.22	5.27	5.93	3.42
Net worth	36.34	41.12	36.87	37.84	40.08	38.33
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	258.38	277.09	237.69	254.65	250.29	255.27

Ratios

Current	140	153	145	150	161	149
Mdse.-rec.	98	113	75	68	61	82
Worth-fixed	272	293	316	258	308	289
Worth-debt	58	73	60	66	74	65
Sales-rec.	625	699	488	527	482	558
Sales-mdse.	638	616	648	766	790	676
Sales-fixed	1,935	1,979	2,042	1,740	1,923	1,928
Sales-worth	711	673	644	672	624	666

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	94	23.50	103	25.75	97	24.25	100	25.00	108	27.00
Mdse-rec.		117		128		91		83		74	
Worth-fixed	15	94	14.10	102	15.30	109	16.35	89	13.35	107	16.05
Worth-debt	25	89	22.25	111	27.75	92	23.	101	25.25	112	28.
Sales-rec.	10	111	11.10	121	12.10	87	8.70	94	9.40	86	8.60
Sales-mdse.	10	94	9.40	91	9.10	96	9.60	112	11.20	115	11.50
Sales-fixed	10	101	10.10	103	10.30	106	10.60	90	9.00	99	9.90
Sales-worth	5	107	5.35	101	5.05	96	4.80	101	5.05	94	4.70
Index	100		95.80		105.35		97.30		98.25		105.75

Specimen Analysis No. 4

No background figures were available against which to measure this company, so the five statements have been cross-footed, adjusting the sales for the June statements to an annual basis. The second and fifth statements are semiannual statements. It is not generally the best practice to include semiannual statements in the cross-footed period statement, but inasmuch as these statements appear to be better than the annual, they have been included. It is unfortunate that there are no type figures, because what appears here as a poor exhibit may be approximately typical in the industry.

The dollar statement shows a very large item for goodwill and promotion expense on the first three statements. This has been deducted from the total assets and the net worth. Apparently the company thought very little of it as an asset, because it was written off on the last two statements.

No detail of the capital and surplus account appeared on the fourth statement. In order to get this detail the loss for the year ended with the fourth statement and was added to the deficit for the previous year. The net worth shown on the fourth statement is the one appearing on the original statement, which is proof for the above reconcilement.

CURRENT RATIO

The current ratio runs from a low of 140 on the first statement to 161 on the fifth statement, an unsatisfactory condition. Although the company shows an improvement, 161 can hardly be called a satisfactory ratio. The company's assets are largely current, but this good condition is offset by large borrowings to support them. Only on the fifth statement does the company pass the acid test, and then only by a small margin.

100 Per Cent Statements

	First statement	Second statement	Third statement	Fourth statement	Fifth statement	Cross-footed period statement
	Co.	Co.	Co.	Co.	Co.	
Cash	4.85	1.44	3.01	3.80	3.45	3.03
Receivables	41.33	39.59	48.69	48.34	51.86	45.71
Inventory	40.47	44.97	36.66	33.23	31.68	37.75
Listed sec.						
Misc.						
Total current	86.65	86.	88.36	85.37	86.99	86.76
Total fixed	13.35	14.	11.64	14.63	13.01	13.24
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	60.05	41.79	60.91	56.17	53.99	54.85
Taxes						
Misc.	1.77	14.25		.72		3.40
Total current	61.82	56.04	60.91	56.89	53.99	58.25
Funded debt						
Total debt	61.82	56.04	60.91	56.89	53.99	58.25
Reserves	1.84	2.84	2.22	5.27	5.93	3.42
Net worth	36.34	41.12	36.87	37.84	40.08	38.33
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	258.38	277.09	237.69	254.65	250.29	255.27

Ratios

Current	140	153	145	150	161	149
Mdse.-rec.	98	113	75	68	61	82
Worth-fixed	272	293	316	258	308	289
Worth-debt	58	73	60	66	74	65
Sales-rec.	625	699	488	527	482	558
Sales-mdse.	638	616	648	766	790	676
Sales-fixed	1,935	1,979	2,042	1,740	1,923	1,928
Sales-worth	711	673	644	672	624	666

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	94	23.50	103	25.75	97	24.25	100	25.00	108	27.00
Mdse-rec.		117		128		91		83		74	
Worth-fixed	15	94	14.10	102	15.30	109	16.35	89	13.35	107	16.05
Worth-debt	25	89	22.25	111	27.75	92	23.	101	25.25	112	28.
Sales-rec.	10	111	11.10	121	12.10	87	8.70	94	9.40	86	8.60
Sales-mdse.	10	94	9.40	91	9.10	96	9.60	112	11.20	115	11.50
Sales-fixed	10	101	10.10	103	10.30	106	10.60	90	9.00	99	9.90
Sales-worth	5	107	5.35	101	5.05	96	4.80	101	5.05	94	4.70
Index	100		95.80		105.35		97.30		98.25		105.75

WORTH FIXED

This ratio, which runs from a low of 258 to 316, ending with 308, shows a sufficiently good margin of owned capital to fixed assets investment.

WORTH DEBT

The poor current ratio is further emphasized in a low owned to borrowed capital position. The high for the period is on the last statement, but a condition where the owners supply $74 of capital for every $100 put up by creditors is far from satisfactory. The company needs additional capital very badly. The series of red figures on the profit-and-loss statement hardly indicates any ability to make money, so we doubt whether outside capital could be attracted. It is suggested that the owners are probably drawing salaries in excess of what the company can afford to pay. It then simmers down to a case of "robbing Peter to pay Paul." The owners are gradually liquidating their interest by taking it out in salaries while the creditors are holding the bag.

SALES RATIOS

The sales for this company have fallen off considerably during the past two years. This in the face of the rather prosperous times enjoyed during this period. In good times people are generally more inclined to purchase the finer things of life. Inasmuch as some of these finer things are the stock in trade of this company, it is thought that unless there is something wrong with either the merchandise or the sales department, there should be an increase rather than a decline in sales.

SALES-MERCHANDISE

This ratio indicates faster turnover of merchandise on the last statement than the other statements. This is due primarily to about a 40-per-cent reduction in the inventory on the dollar statement from the first statement. The loss

100 Per Cent Statements

	First statement	Second statement	Third statement	Fourth statement	Fifth statement	Cross-footed period statement
	Co.	Co.	Co.	Co.	Co.	
Cash	4.85	1.44	3.01	3.80	3.45	3.03
Receivables	41.33	39.59	48.69	48.34	51.86	45.71
Inventory	40.47	44.97	36.66	33.23	31.68	37.75
Listed sec.						
Misc.						
Total current	86.65	86.	88.36	85.37	86.99	86.76
Total fixed	13.35	14.	11.64	14.63	13.01	13.24
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	60.05	41.79	60.91	56.17	53.99	54.85
Taxes						
Misc.	1.77	14.25		.72		3.40
Total current	61.82	56.04	60.91	56.89	53.99	58.25
Funded debt						
Total debt	61.82	56.04	60.91	56.89	53.99	58.25
Reserves	1.84	2.84	2.22	5.27	5.93	3.42
Net worth	36.34	41.12	36.87	37.84	40.08	38.33
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Sales	258.38	277.09	237.69	254.65	250.29	255.27

Ratios

Current	140	153	145	150	161	149
Mdse.-rec.	98	113	75	68	61	82
Worth-fixed	272	293	316	258	308	289
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Sales-fixed	1,935	1,979	2,042	1,740	1,923	1,928
Sales-worth	711	673	644	672	624	666

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	94	23.50	103	25.75	97	24.25	100	25.00	108	27.00
Mdse-rec.		117		128		91		83		74	
Worth-fixed	15	94	14.10	102	15.30	109	16.35	89	13.35	107	16.05
Worth-debt	25	89	22.25	111	27.75	92	23.	101	25.25	112	28.
Sales-rec.	10	111	11.10	121	12.10	87	8.70	94	9.40	86	8.60
Sales-mdse.	10	94	9.40	91	9.10	96	9.60	112	11.20	115	11.50
Sales-fixed	10	101	10.10	103	10.30	106	10.60	90	9.00	99	9.90
Sales-worth	5	107	5.35	101	5.05	96	4.80	101	5.05	94	4.70
Index	100		95.80		105.35		97.30		98.25		105.75

in inventory on the fourth statement and reduction in net worth hardly need explanation. The company's dollar sales figures for the fifth statement are 76 per cent of the first figures, while the last inventory is 63 per cent of the first. This further indicates a loss of the market and also a reduction of inventory by something more than the loss of the market as expressed in percentage. An explanation of the loss in sales certainly should be forthcoming.

SALES-RECEIVABLES

The company has a considerably larger percentage of its total assets tied up in receivables on the last statement than on previous ones, as shown by the 100 per cent statement. If these accounts are good, it is a satisfactory condition, but an inquiry should be made as to whether or not the company is selling on a time basis to a greater extent. Their ratio of sales to receivables reflects a slowing up which prompts this suggestion. Creditors should make certain that the company does not hypothecate these receivables from under their obligations, and in view of a poor current and worth debt position the creditors should offset a lien on these receivables or some stringent methods to prevent other hypothecation. Cash is only 6 per cent of payables, but as the extent of the bank loans in the total payables is not known it is impossible to say whether or not a satisfactory balance is being maintained. Six per cent of payables does not, however, seem sufficient.

SUMMARY

1. Current ratio is low.
2. New capital is needed.
3. Earnings do not seem sufficient to attract outside capital.
4. Sales show substantial decrease.
5. Conserve earnings and cut expenses to build up a better owned to borrowed capital relation.

Specimen Analysis No. 5

Data Submitted by Company

Assets	First year	Second year	Third year	Fourth year	Fifth year
Cash	385,244	459,133	413,438	740,962	669,478
Receivables	2,623,078	2,413,769	2,361,673	2,274,464	2,651,235
Inventory	2,097,937	3,311,833	3,209,528	5,882,815	4,420,760
Listed secur.					
Misc.					
Total current	5,106,259	6,184,735	5,984,639	8,898,241	7,741,473
Total fixed	2,406,110	2,810,187	3,004,252	3,732,745	5,556,401
Total	7,512,369	8,994,922	8,988,891	12,630,986	13,297,874
Payables	482,295	1,284,492	1,203,647	4,089,425	1,689,272
Taxes					
Misc.	138,417	198,024	198,431	210,419	96,718
Total current	620,712	1,482,516	1,402,078	4,299,844	1,785,990
Funded	2,220,000	2,220,000	2,220,000	2,220,000	3,996,000
Total debt	2,840,712	3,702,516	3,622,078	6,519,844	5,781,990
Reserves					
Net worth	4,671,657	5,292,406	5,366,813	6,111,142	7,515,884
Total	7,512,369	8,994,922	8,988,891	12,630,986	13,297,874
Sales	10,426,600	10,451,982	10,765,742	14,279,225	13,949,074

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.13	5.30	5.10	5.08	4.60	5.07	5.87	6.42	5.03	4.56
Receivables	34.92	15.10	26.84	14.88	26.27	14.31	18.01	14.94	19.94	14.68
Inventory	27.92	21.20	36.82	22.95	35.71	21.20	46.57	24.52	33.24	26.85
Listed secur.		1.50		.52		.45		.01		.01
Misc.				.01		.03				.77
Total current	67.97	43.10	68.76	43.44	66.58	41.06	70.45	45.89	58.21	46.87
Total fixed	32.03	56.90	31.24	56.56	33.42	58.94	29.55	54.11	41.79	53.13
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	6.42	13.40	14.28	12.12	13.39	9.53	32.38	9.63	12.70	9.32
Taxes				.12		.44		.61		.68
Misc.	1.84		2.20	.68	2.21	.65	1.67	1.89	.73	1.69
Total current	8.26	13.40	16.48	12.92	15.60	10.62	34.05	12.13	13.43	11.69
Funded	29.55	24.20	24.68	24.14	24.70	23.68	17.57	23.55	30.05	25.44
Total debt	37.81	37.60	41.16	37.06	40.30	34.30	51.62	35.68	43.48	37.13
Reserves				2.63		3.47		3.48		
Net worth	62.19	62.40	58.84	60.31	59.70	62.23	48.38	60.84	56.52	62.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	138.79	73.60	116.20	87.95	119.77	86.10	113.05	94.79	104.89	109.83

Ratios

	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Current	822	322	417	348	426	349	207	280	433	300
Mdse-rec.										
Worth-fixed	194	110	188	118	179	115	164	130	135	140
Worth-debt	165	192	143	201	148	185	94	190	130	175
Sales-rec.	397	487	433	618	456	773	628	660	526	700
Sales-mdse.	497	347	316	434	335	431	243	380	316	500
Sales-fixed	433	130	372	212	358	198	383	245	251	350
Sales-worth	223	118	197	179	201	153	234	170	186	200

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	161	40.25	117	29.25	118	29.50	74	18.50	131	32.75
Mdse-rec.											
Worth-fixed	15	144	21.60	137	20.55	136	20.40	121	18.15	96	14.40
Worth-debt	25	86	21.50	71	17.75	80	20.00	49	12.25	74	18.50
Sales-rec.	10	82	8.20	70	7.	59	5.90	95	9.50	75	7.50
Sales-mdse.	10	130	13.	73	7.30	78	7.80	64	6.40	63	6.30
Sales-fixed	10	170	17.	143	14.30	145	14.50	136	13.60	72	7.20
Sales-worth	5	147	7.35	109	5.45	124	6.20	127	6.35	93	4.65
Index	100		128.90		101.60		104.30		84.75		91.30

Specimen Analysis No. 5

This company is engaged in the manufacture of a product, the raw material for which is subject to considerable fluctuation in price, which naturally requires that a great deal of knowledge and judgment must be exercised if profits are to be consistently made. Only a few of the concerns in this industry have been consistently profitable.

The figures submitted in this example include some subsidiary data which explain the increase in fixed assets and net worth. The loss in the last year's operation amounted to $474,515 after absorbing an inventory deflation and several other adjustments of approximately $1,480,000. The dividends amounted to $442,641. To offset the losses the plant was marked up $1,480,000 and a 25-per-cent stock dividend declared out of capital surplus. The company enjoyed the largest unit sales in its history but the dollar value is somewhat less than last year.

CURRENT RATIO

With the exception of the fourth year this ratio has been better than the group for the period. It is noted that the ratio, however, was improved the last year by funding a substantial part of the current indebtedness, so that while the current debt goes down $2,514,000, the funded debt goes up about $1,776,000, leaving a net reduction in total debt of about $738,000. The writers have often noticed companies which have funded in the face of a falling current ratio, only to let the current position decline again. Some managements seem to think that, having funded a debt, they can forget it, expecting to use the same means again if the current ratio falls. Such practice is all right within bounds, but it also often marks the first step in a company headed for bankruptcy.

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.13	5.30	5.10	5.08	4.60	5.07	5.87	6.42	5.03	4.56
Receivables	34.92	15.10	26.84	14.88	26.27	14.31	18.01	14.94	19.94	14.68
Inventory	27.92	21.20	36.82	22.95	35.71	21.20	46.57	24.52	33.24	26.85
Listed secur.		1.50		.52		.45		.01		.01
Misc.				.01		.03				.77
Total current	67.97	43.10	68.76	43.44	66.58	41.06	70.45	45.89	58.21	46.87
Total fixed	32.03	56.90	31.24	56.56	33.42	58.94	29.55	54.11	41.79	53.13
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	6.42	13.40	14.28	12.12	13.39	9.53	32.38	9.63	12.70	9.32
Taxes				.12		.44		.61		.68
Misc.	1.84		2.20	.68	2.21	.65	1.67	1.89	.73	1.69
Total current	8.26	13.40	16.48	12.92	15.60	10.62	34.05	12.13	13.43	11.69
Funded	29.55	24.20	24.68	24.14	24.70	23.68	17.57	23.55	30.05	25.44
Total debt	37.81	37.60	41.16	37.06	40.30	34.30	51.62	35.68	43.48	37.13
Reserves				2.63		3.47		3.48		
Net worth	62.19	62.40	58.84	60.31	59.70	62.23	48.38	60.84	56.52	62.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	138.79	73.60	116.20	87.95	119.77	86.10	113.05	94.79	104.89	109.83

Ratios

	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Current	822	322	417	348	426	349	207	280	433	300
Mdse-rec.										
Worth-fixed	194	110	188	118	179	115	164	130	135	140
Worth-debt	165	192	143	201	148	185	94	190	130	175
Sales-rec.	397	487	433	618	456	773	628	660	526	700
Sales-mdse.	497	347	316	434	335	431	243	380	316	500
Sales-fixed	433	130	372	212	358	198	383	245	251	350
Sales-worth	223	118	197	179	201	153	234	170	186	200

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	161	40.25	117	29.25	118	29.50	74	18.50	131	32.75
Mdse-rec.											
Worth-fixed	15	144	21.60	137	20.55	136	20.40	121	18.15	96	14.40
Worth-debt	25	86	21.50	71	17.75	80	20.00	49	12.25	74	18.50
Sales-rec.	10	82	8.20	70	7.	59	5.90	95	9.50	75	7.50
Sales-mdse.	10	130	13.	73	7.30	78	7.80	64	6.40	63	6.30
Sales-fixed	10	170	17.	143	14.30	145	14.50	136	13.60	72	7.20
Sales-worth	5	147	7.35	109	5.45	124	6.20	127	6.35	93	4.65
Index	100		128.90		101.60		104.30		84.75		91.30

WORTH FIXED RATIO

This ratio is above the group ratio for the period, except in the last year, when, as previously noted, the plant was written up $1,480,000. The justification for this write-up should be carefully investigated. It is a favorite way of changing a real operating deficit into an apparent profit. While it is true that the stockholders are the ones most interested in this write-up, due to the 25-per-cent stock dividend received, nevertheless it is to the interest of the credit man also whether or not there is a real value behind this write-up.

While the 100 per cent figures show the company has less invested in fixed assets than the industry shows, the actual dollar figures show a steady increase from $2,406,110 in the first year to $5,556,401 the last year.

At this point it might be well to inject one of the supplementary tests—the funded to total fixed assets ratio.

FUNDED DEBT TO FIXED ASSETS RATIO

Year	Co.	Group
First	92	42
Second	79	42
Third	74	40
Fourth	59	43
Fifth	72	48

The company has mortgaged its plant to a far greater extent than the group in all five years. The mortgage the first year probably carried with it a lien on the current assets because the margin is so small. The writers suggest that such a condition is possible again in other years and believe the indenture in the mortgage should be carefully read. If there is a lien on the current assets or it is necessary to maintain a certain current ratio, this affects the standing as a credit risk. Also, attention is called to the fact that the fixed assets include total plant equipment and

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.13	5.30	5.10	5.08	4.60	5.07	5.87	6.42	5.03	4.56
Receivables	34.92	15.10	26.84	14.88	26.27	14.31	18.01	14.94	19.94	14.68
Inventory	27.92	21.20	36.82	22.95	35.71	21.20	46.57	24.52	33.24	26.85
Listed secur.		1.50		.52		.45		.01		.01
Misc.				.01		.03				.77
Total current	67.97	43.10	68.76	43.44	66.58	41.06	70.45	45.89	58.21	46.87
Total fixed	32.03	56.90	31.24	56.56	33.42	58.94	29.55	54.11	41.79	53.13
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	6.42	13.40	14.28	12.12	13.39	9.53	32.38	9.63	12.70	9.32
Taxes				.12		.44		.61		.68
Misc.	1.84		2.20	.68	2.21	.65	1.67	1.89	.73	1.69
Total current	8.26	13.40	16.48	12.92	15.60	10.62	34.05	12.13	13.43	11.69
Funded	29.55	24.20	24.68	24.14	24.70	23.68	17.57	23.55	30.05	25.44
Total debt	37.81	37.60	41.16	37.06	40.30	34.30	51.62	35.68	43.48	37.13
Reserves				2.63		3.47		3.48		
Net worth	62.19	62.40	58.84	60.31	59.70	62.23	48.38	60.84	56.52	62.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	138.79	73.60	116.20	87.95	119.77	86.10	113.05	94.79	104.89	109.83

Ratios

	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Current	822	322	417	348	426	349	207	280	433	300
Mdse-rec.										
Worth-fixed	194	110	188	118	179	115	164	130	135	140
Worth-debt	165	192	143	201	148	185	94	190	130	175
Sales-rec.	397	487	433	618	456	773	628	660	526	700
Sales-mdse.	497	347	316	434	335	431	243	380	316	500
Sales-fixed	433	130	372	212	358	198	383	245	251	350
Sales-worth	223	118	197	179	201	153	234	170	186	200

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	161	40.25	117	29.25	118	29.50	74	18.50	131	32.75
Mdse-rec.											
Worth-fixed	15	144	21.60	137	20.55	136	20.40	121	18.15	96	14.40
Worth-debt	25	86	21.50	71	17.75	80	20.00	49	12.25	74	18.50
Sales-rec.	10	82	8.20	70	7.	59	5.90	95	9.50	75	7.50
Sales-mdse.	10	130	13.	73	7.30	78	7.80	64	6.40	63	6.30
Sales-fixed	10	170	17.	143	14.30	145	14.50	136	13.60	72	7.20
Sales-worth	5	147	7.35	109	5.45	124	6.20	127	6.35	93	4.65
Index	100		123.90		101.60		104.30		84.75		91.30

other non-current assets. Omitting some of the non-current assets would reduce the security behind the mortgage and make the margin less. This high percentage of mortgage is a danger sign, and if the mortgage carries with it a lien on the current assets, it may change the entire complexion of the present satisfactory current position.

WORTH DEBT RATIO

This ratio has not been as high as the group in any of the five years, as shown by the following table:

Year	Co.	Group	Rel.
First	165	192	86
Second	143	201	71
Third	148	185	80
Fourth	94	190	49
Fifth	130	175	74

In the last year the company only shows $56.52 supplied by the owners out of every $100 of total footings, against the group of $62.87, and a debt of $43.48 against the group of $37.13. This, it must be remembered, includes the write-up. If this is not included the ratio is only 104 per cent, a very poor condition. The owners are then only supplying $4 of capital more per $100 than the creditors—not a safe margin. This indicates a top-heavy with debt position. The company has maintained a liberal dividend policy, which the figures do not indicate was warranted. Being top-heavy with debt, this company should conserve its earnings so as to be less dependent upon borrowings for capital supply. This would be a sound policy to establish credit. A too liberal dividend policy in the face of the debt position has the look of a stock-selling support scheme.

SALES RATIOS

These ratios are below parity in the last year. The 100-per-cent statement indicates that there is about only a

100 Per Cent Statements

	First year Co.	First year Group	Second year Co.	Second year Group	Third year Co.	Third year Group	Fourth year Co.	Fourth year Group	Fifth year Co.	Fifth year Group
Cash	5.13	5.30	5.10	5.08	4.60	5.07	5.87	6.42	5.03	4.56
Receivables	34.92	15.10	26.84	14.88	26.27	14.31	18.01	14.94	19.94	14.68
Inventory	27.92	21.20	36.82	22.95	35.71	21.20	46.57	24.52	33.24	26.85
Listed secur.		1.50		.52		.45		.01		.01
Misc.				.01		.03				.77
Total current	67.97	43.10	68.76	43.44	66.58	41.06	70.45	45.89	58.21	46.87
Total fixed	32.03	56.90	31.24	56.56	33.42	58.94	29.55	54.11	41.79	53.13
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	6.42	13.40	14.28	12.12	13.39	9.53	32.38	9.63	12.70	9.32
Taxes				.12		.44		.61		.68
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Total current	8.26	13.40	16.48	12.92	15.60	10.62	34.05	12.13	13.43	11.69
Funded	29.55	24.20	24.68	24.14	24.70	23.68	17.57	23.55	30.05	25.44
Total debt	37.81	37.60	41.16	37.06	40.30	34.30	51.62	35.68	43.48	37.13
Reserves				2.63		3.47		3.48		
Net worth	62.19	62.40	58.84	60.31	59.70	62.23	48.38	60.84	56.52	62.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Ratios

	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Current	822	322	417	348	426	349	207	280	433	300
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Worth-fixed	15	144	21.60	137	20.55	136	20.40	121	18.15	96	14.40
Worth-debt	25	86	21.50	71	17.75	80	20.00	49	12.25	74	18.50
Sales-rec.	10	82	8.20	70	7.	59	5.90	95	9.50	75	7.50
Sales-mdse.	10	130	13.	73	7.30	78	7.80	64	6.40	63	6.30
Sales-fixed	10	170	17.	143	14.30	145	14.50	136	13.60	72	7.20
Sales-worth	5	147	7.35	109	5.45	124	6.20	127	6.35	93	4.65
Index	100		128.90		101.60		104.30		84.75		91.30

5-per-cent variation in volume between the company's figures and the group in the last year. The group figures indicate that a higher turnover should be expected, and while the comment was made that the unit sales had increased, the dollar sales had shown a recession over last year. In order to justify the larger percentage of receivables and inventory it is reasonable to expect a higher sales volume. This is not offered as a very serious criticism, however, except as it suggests competition in selling terms and the necessity for precaution against merchandise speculation. The creditor should satisfy himself on the soundness of the subject's sales terms and inventory balance.

SUMMARY

1. Do not feel too secure in the bolstered-up current ratio through funding.
2. Ascertain if write-up really adds anything to plant and was the stock dividend justified.
3. Plant heavily mortgaged which raises the question, "Is there a lien on the current assets?"
4. Liberal dividend payments hardly seem to have been justified and the retention of earnings in the business to bolster up a declining worth debt ratio is suggested as a better remedy than the reappraisal of plant.

Specimen Analyses No. 6

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year	Fifth year
Cash	1,242,611	353,676	289,954	373,667	474,474
Rec.	939,250	992,661	1,115,594	1,505,823	1,686,960
Inventory	1,470,589	1,642,208	1,855,315	1,836,056	2,005,941
Listed securities	502,880	22,172	1,110	1,110	
Misc.	[a] 109,476	[a] 62,805	[a] 52,033	[a] 43,095	[a] 41,076
Total current	4,264,806	3,073,522	3,314,006	3,759,751	4,208,451
Plant and equipment	4,332,557	5,115,192	5,191,154	5,148,193	5,267,046
Misc.	768,989	833,923	829,559	811,542	766,172
Total fixed	5,101,546	5,949,115	6,020,713	5,959,735	6,033,218
Goodwill	1,283,021	1,283,021	1,283,021	1,283,021	1,283,021
Total—less G. W.	9,366,352	9,022,637	9,334,719	9,719,486	10,241,669
Payables	1,283,953	836,350	1,260,286	1,440,556	2,029,077
Taxes	15,910				
Misc.					
Total current	1,299,863	836,350	1,260,286	1,440,556	2,029,077
Funded	5,676,049	3,646,720	3,609,720	3,474,855	3,537,385
Total debt	6,975,912	4,483,070	4,870,006	4,915,411	5,566,462
Reserves	34,847	53,993	36,062	62,432	41,108
Minority stckhrs. Sub. Co.	3,102				
Capital stock					
Surplus					
Net worth—Inc. minority stock, less G.W.	2,355,593	4,485,574	4,428,651	4,741,643	4,634,099
Total	9,366,352	9,022,637	9,344,719	9,719,486	10,241,669
Sales	Not Reported	22,461,648	22,200,000	27,750,000	31,450,000

[a] Includes certain prepaid accounts and claims which have a contingent current character.

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
[a]Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
Taxes	.17	.07		.08		.07		.12		1.97
Misc.		.29		.22		.22		1.61		.18
Total current	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Funded	60.60	26.66	40.42	26.82	38.67	27.49	35.75	25.91	34.54	26.38
Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
[a] Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales		182.11	248.95	203.95	237.72	210.71	285.51	202.98	307.08	231.74

[a]Less Good Will

Ratios

Current	328	233	367	298	263	274	260	321	207	265
Mdse.-rec.	156	83	165	126	166	139	122	140	119	125
Worth-fixed	46	136	75	119	73	128	79	124	77	125
Worth-debt	34	106	100	148	91	145	96	194	83	165
Sales-rec.		1,037	2,263	1,280	1,990	2,141	1,843	1,538	1,864	1,590
Sales-mdse.		899	1,368	950	1,197	1,119	1,511	1,246	1,567	1,270
Sales-fixed		536	377	505	368	508	465	529	521	575
Sales-worth		414	501	457	501	452	585	353	678	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	129	32.25	119	29.75	96	24.00	81	20.25	78	19.50
Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

Specimen Analysis No. 6

Before taking up the analysis of this company by ratios the dollar figures need some consideration. In them there appears a "goodwill" item of $1,283,021. This has remained stationary for the entire period. As the earning figures have not indicated any unusual profit capacity, there seems to be no justification for its maintenance except to create a greater apparent net worth through liberal stock issue at the time of organization, through consolidation of several separate operations. As an accounting set-up and offset to stock issue such an item is explainable, but as a liquidating value it is negligible because there has been no indication that earnings are commensurate with the capital issued on this basis.

Therefore, the usual practice of deducting goodwill from the total assets and also reducing the net worth by that amount has been followed. Naturally, this affects ratios involving net worth, but in liquidation the goodwill would be so much wind. This may seem quite arbitrary, but the analysis of any set of figures when made as a basis of credit should allow only such assets to stand as have at least some fundamental realizable value in liquidation. If this company were sold, the stated value could only be obtained for the goodwill by the greatest possible stroke of luck. Therefore it seems reasonable to eliminate it from the credit picture.

The amount under "miscellaneous current assets" is made up of insurance premiums, prepaid interest, special deposits, and claims. These items are ordinarily classified as non-current and placed down with the miscellaneous fixed assets, but we have been liberal in this instance because the items were so classified in conference by a bank as probably good, and as the company needed analytical liberality it was given the benefit of the doubt. The reasons for this generosity will follow in the analysis.

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
*Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
Taxes	.17	.07		.08		.07		.12		1.97
Misc.		.29		.22		.22		1.61		.18
Total current	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Funded	60.60	26.66	40.42	26.82	38.67	27.49	35.75	25.91	34.54	26.38
Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
* Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales		182.11	248.95	203.95	237.72	210.71	285.51	202.98	307.08	231.74

*Less Good Will

Ratios

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Mdse.-rec.	156	83	165	126	166	139	122	140	119	125
Worth-fixed	46	136	75	119	73	128	79	124	77	125
Worth-debt	34	106	100	148	91	145	96	194	83	165
Sales-rec.		1,037	2,263	1,280	1,990	2,141	1,843	1,538	1,864	1,590
Sales-mdse.		899	1,368	950	1,197	1,119	1,511	1,246	1,567	1,270
Sales-fixed		536	377	505	368	508	465	529	521	575
Sales-worth		414	501	457	501	452	585	353	678	400

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Current	25	129	32.25	119	29.75	96	24.00	81	20.25	78	19.50
Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

CURRENT RATIO

Here is a beautiful example of the folly of too great a reliance on the current ratio as an indicator of credit goodness. As an indicator it serves its purpose best in pointing out a steady decline over the five years. The current ratio is as follows:

Year	Current Ratio
First	328
Second	367
Third	263
Fourth	260
Fifth	207

This, of course, is above the established 200 per cent, or 2 for 1, and amply meets the requirements set up in one of the company's bond issues. This industry is regarded as a particularly liquid industry, but an examination of a number of companies in the same line indicates that this company is not keeping pace even when comparing only the current ratio. These comparisons are as follows:

Year	Co. ratios	Selected ratios	Relation Co. to industry ratios
First	328	233	129
Second	367	298	119
Third	263	274	96
Fourth	260	321	81
Fifth	207	265	78

The above table indicates quite clearly that the company is not keeping up in current ratio proportion with the industry in general, although its ratio stays above 200 per cent.

An examination of the make-up of the current assets by the acid test and merchandise-to-receivables ratio is in order at this time.

100 Per Cent Statements

Date	First year Co.	First year Group	Second year Co.	Second year Group	Third year Co.	Third year Group	Fourth year Co.	Fourth year Group	Fifth year Co.	Fifth year Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
[a]Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
Taxes	.17	.07		.08		.07		.12		1.97
Misc.		.29		.22		.22		1.61		.18
Total current	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Funded	60.60	26.66	40.42	26.82	38.67	27.49	35.75	25.91	34.54	26.38
Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
[a] Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales		182.11	248.95	203.95	237.72	210.71	285.51	202.98	307.08	231.74

[a]Less Good Will

Ratios

	First year Co.	First year Group	Second year Co.	Second year Group	Third year Co.	Third year Group	Fourth year Co.	Fourth year Group	Fifth year Co.	Fifth year Group
Current	328	233	367	298	263	274	260	321	207	265
Mdse.-rec.	156	83	165	126	166	139	122	140	119	125
Worth-fixed	46	136	75	119	73	128	79	124	77	125
Worth-debt	34	106	100	148	91	145	96	194	83	165
Sales-rec.		1,037	2,263	1,280	1,990	2,141	1,843	1,538	1,864	1,590
Sales-mdse.		899	1,368	950	1,197	1,119	1,511	1,246	1,567	1,270
Sales-fixed		536	377	505	368	508	465	529	521	575
Sales-worth		414	501	457	501	452	585	353	678	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	129	32.25	119	29.75	96	24.00	81	20.25	78	19.50
Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

ACID TEST RATIO

	First year Co.	First year Group	Second year Co.	Second year Group	Third year Co.	Third year Group	Fourth year Co.	Fourth year Group	Fifth year Co.	Fifth year Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Total	23.30	34.64	14.92	27.17	15.06	24.33	19.34	19.98	21.10	20.43
Current debt	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Ratio	167	157	161	177	111	157	130	149	106	164

With the exception of the first statement in this series the company has been below the group. The last statement shows the company at its worst, in comparison being only about 60 per cent of the group figures, although it does meet the acid test. The advantage of having group figures as backgrounds is clearly indicated in this as well as in the current ratio.

The receivables for the company and the group are in about the same proportion in the last statement as shown by the 100-per-cent statements, as is also the cash and receivables. However, the group shows 50 per cent more merchandise than receivables on the 100-per-cent statement while the company shows only about 20 per cent. The difference in these percentage figures is in the fixed assets, where the individual is about six points higher than the group.

WORTH DEBT RATIO

The company's weaknesses are disclosed to a greater extent in the several other ratios. The next most important ratio being the worth debt, its trend over the five year period is herewith charted.

Year	Co. ratios	Selected ratios	Relation Co. to industry ratios
First	34	106	32
Second	100	148	67
Third	91	145	63
Fourth	96	194	49
Fifth	83	165	50

This set of figures shows a clear case of undercapitaliza-

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
*Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
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Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Index	100				96.30		81.00		81.40		80.70

tion or a top-heavy debt position. The company is supplying less of the total capital at use than the creditors—certainly not a satisfactory condition from the creditors' point of view. These heavy borrowings, both current and of a fixed nature, create heavy fixed interest charges which in turn eat into the profits. When we have a condition where the current ratio is falling steadily and a worth-debt relationship of only 83, it is indeed time for creditors to watch their loans. When these ratios in turn are measured against a number of other companies in the same line and the results are found in a relationship of only 78 and 50 per cent, we have all the warnings necessary for any conservative banker. It is interesting and instructive to note the movement of the current ratio and the worth to debt ratio jointly from another angle. On the first two statements the current ratio was well above 300 per cent. It is not an uncommon experience to find an easy current position, brought about by either funded or capital financing, degenerate as long as it is above the mythical safety point of 200 per cent. The current ratio for this company is no exception to this procedure, as it falls constantly and considerably from its high point the second year, which was made by capital financing apparently. From this statement up to the last the current borrowings have steadily increased, until in the last year they reach in actual dollars an amount roughly two and one half times that of the second year. At the same time the current assets have increased only 36 per cent. Net worth has not kept pace with total debt, and the parallel study of these two ratios exposes a weakening condition with a current ratio probably but slightly criticized because still above 200 per cent. This is a good example of the necessity of at least the dual test of these two ratios.

The variety of bonds making up their funded debts and the number of different kinds of stocks outstanding suggest forced and mixed financing in order to get capital at any sacrifice.

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
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[a]Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
[a] Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

WORTH FIXED RATIO

Still another proportion which is and has been consistently out of line is the relationship of the owned capital or net worth to the fixed asset investment. Using a table as in the previous ratios, the following picture for the worth-fixed ratio is shown.

Year	Co. ratios	Selected ratios	Relation Co. to industry ratios
First..........	46	136	34
Second........	75	119	63
Third.........	73	128	57
Fourth........	79	124	64
Fifth..........	77	125	61

This company does not believe in the theory that the stockholders should supply the funds for the purchase of fixed assets, and have some money in excess to be used in the current operations of the business. The industry shows this condition of supplying part of the current funds from net worth in the ratios tabulated above. The company's relationship to this industry is 36 points below parity at its best point.

WORTH TO NET FIXED RATIO

For the benefit of those students who consider that any company should be allowed consideration for its funded debt inasmuch as it is generally issued with the fixed assets as security, another ratio is injected which is computed on the basis of fixed-assets net of funded debt and the resulting figure used as divisor in the ratio of net worth to net fixed assets. The following table is the result of this computation. The first year was not included, as it is not understood how the funded debt could exceed the fixed assets unless it means that the bonds are secured by a lien on current assets as well as the plant and equipment, and stocks and bonds of subsidiary companies. If this were the

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
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Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
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ªTotal	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
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Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
ª Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
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Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

case, then there would be a vital effect on the current ratio which that year stood at 328 per cent. It suggests a close reading of the bond indentures to which the writers do not have access.

Year	Co. ratio	Group	Relation Co. to group
Second	195	248	78
Third	183	235	78
Fourth	191	226	84
Fifth	185	227	81

This computation gives the company the benefit of any possible argument that funded debt should be taken into consideration. This relationship of net worth to net fixed assets presents any calculation which has to do with net worth and fixed assets in the best light. However, even in this relationship the company at its best is only 84 per cent of parity to the industry proportions.

FIXED ASSETS TO FUNDED DEBT

In connection with these two ratios having to do with net worth and fixed assets the following calculation is interesting. This has to do with the percentage relationship that the funded debt bears to the fixed assets.

Year	Co.	Group	Relation Co. to group
Second	61	54	89
Third	59	53	89
Fourth	59	50	84
Fifth	59	50	84

This again shows that the company is not equal to the group. Not only is the net worth of this company insufficient to take care of the fixed assets when computed on a gross basis, but they also have a larger funded debt against the plant investment than is shown by the group.

As a future financing proposition this heavy mortgage

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
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Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
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Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

position in all probability shuts off any funding operations as the relation of funded debt to fixed assets seems already too high. The one source of new capital would seem to be stock issue. This could at the same time correct a weakening current position and the top-heavy debt position. To make such an investment interesting to capital outside of the company's present stockholders decided earning ability would have to be demonstrated, which up to the 1925 statement has been lacking. A sharp scaling down of costs, if possible, might bring about some results along this line. It may be that extravagant or costly and ineffective management may be the deterrent to profits and that the condition can be remedied by drastic management renovation.

SALES FIXED RATIO

Often heavy plant investment is required by the type of business. Such is the case in this industry, but such plant investment must be economically justified and the measure of its productive capacity is the relationship of the sales to the fixed assets. This is shown in the following table.

Year	Co. ratio	Selected ratio	Relationship Co. to selected ratio
Second......	377	505	74
Third.......	368	508	72
Fourth......	465	529	88
Fifth.......	521	575	91

Once again the company does not measure up to the group figures. This company has tied up too much in plant which is not producing sufficient volume to justify the investment. The relation of the ratio of the company to the ratio for the group is improving, but still is nearly 10 per cent below parity. It looks like an over, or at least a very liberal, valuation of plants at some time in its history. This condition possibly may correct itself.

The fact that the company 100-per-cent statement shows

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
*Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
Taxes	.17	.07		.08		.07		.12		1.97
Misc.		.29		.22		.22		1.61		.18
Total current	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Funded	60.60	26.66	40.42	26.82	38.67	27.49	35.75	25.91	34.54	26.38
Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
* Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales		182.11	248.95	203.95	237.72	210.71	285.51	202.98	307.08	231.74

*Less Good Will

Ratios

Current	328	233	367	298	263	274	260	321	207	265
Mdse.-rec.	156	83	165	126	166	139	122	140	119	125
Worth-fixed	46	136	75	119	73	128	79	124	77	125
Worth-debt	34	106	100	148	91	145	96	194	83	165
Sales-rec.		1,037	2,263	1,280	1,990	2,141	1,843	1,538	1,864	1,590
Sales-mdse.		899	1,368	950	1,197	1,119	1,511	1,246	1,567	1,270
Sales-fixed		536	377	505	368	508	465	529	521	575
Sales-worth		414	501	457	501	452	585	353	678	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	129	32.25	119	29.75	96	24.00	81	20.25	78	19.50
Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

an investment in fixed assets ten to fifteen points higher than the group overshadows the fact that it has a sales volume slightly in excess of the industry on a 100-per-cent basis.

SALES-RECEIVABLE AND SALES-MERCHANDISE RATIOS

The sales receivables and sales merchandise ratios are higher than the group. While usually an advance is a betterment, when the factors previously mentioned are considered, this high turnover may be a danger signal. The company is relying on high velocity to keep up its production, distribution, and collections, and if anything should occur due to the competitive nature of the business or a trade slump, these high velocities might not be maintained and the company could easily get into a very bad position.

SALES WORTH RATIO

The sales to net worth ratio is also very high, which further suggests overtrading. It must not be overlooked in the interpretation of this ratio that the company's net worth is low, substantially lower than the group, so one would naturally expect it should turn faster.

Sales volume as indicated by the 100 per cent statements has been higher for this company than is typical in the industry. The industry depends on volume, speed, and number of turnovers for its profit, as the profit is a small percentage of the dollar sales. The high volume, together with apparently small profits as reflected by the increase in net worth the past four years, suggests a striving for volume at the sacrifice of profits.

The net result of these weaknesses seems rather definitely indicated in the index figure. The position reached the last year of about 81 per cent of parity seems to reflect pretty accurately the relative strength of the company when compared with a group of its kind. The saving fact in the situation is that the condition has not become worse during

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	13.27	5.39	3.92	7.69	3.11	4.74	3.85	3.52	4.63	3.22
Receivables	10.03	29.25	11.00	19.48	11.95	19.59	15.49	16.46	16.47	17.21
Inventory	15.70	21.83	18.20	21.48	19.87	22.99	18.89	26.92	19.59	26.92
Listed secur.	5.37	.74	.25	1.82	.01	1.46	.01	.80		.02
Misc.	1.16	.06	.69	.08	.56	.23	.44	.22	.40	.02
Total current	45.53	57.27	34.06	50.55	35.50	49.01	38.68	47.92	41.09	47.39
Total fixed	54.47	42.73	65.94	49.45	64.50	50.99	61.32	52.08	58.91	52.61
[a]Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	13.71	21.73	9.27	15.01	13.50	15.21	14.82	11.63	19.81	10.29
Taxes	.17	.07		.08		.07		.12		1.97
Misc.		.29		.22		.22		1.61		.18
Total current	13.88	22.09	9.27	15.31	13.50	15.50	14.82	13.36	19.81	12.44
Funded	60.60	26.66	40.42	26.82	38.67	27.49	35.75	25.91	34.54	26.38
Total debt	74.48	48.75	49.69	42.13	52.17	42.99	50.57	39.27	54.35	38.82
Reserves	.37	1.59	.60	1.70	.39	1.76	.64	1.56	.40	1.69
[a] Net worth	25.15	49.66	49.71	56.17	47.44	55.25	48.79	59.17	45.25	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales		182.11	248.95	203.95	237.72	210.71	285.51	202.98	307.08	231.74

[a]Less Good Will

Ratios

Current	328	233	367	298	263	274	260	321	207	265
Mdse.-rec.	156	83	165	126	166	139	122	140	119	125
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Index

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Current	25	129	32.25	119	29.75	96	24.00	81	20.25	78	19.50
Mdse.-rec.		147		124		117		87		95	
Worth-fixed	15	34	5.10	63	9.45	57	8.55	64	9.60	61	9.15
Worth-debt	25	32	8.00	67	16.75	63	15.75	49	12.25	50	12.50
Sales-rec.	10			144	14.40	93	9.30	117	11.70	115	11.50
Sales-mdse.	10			131	13.10	107	10.70	118	11.80	119	11.90
Sales-fixed	10			74	7.40	72	7.20	88	8.80	91	9.10
Sales-worth	5			109	5.45	110	5.50	140	7.00	141	7.05
Index	100				96.30		81.00		81.40		80.70

the last two years. The acute danger point for an index figure might be set somewhat lower, perhaps around 75 per cent of parity. If this be so, then the company has a thin margin. But if it is to succeed in working out it must show earnings or go through a revamping that may save the creditors at the expense of the stockholders.

SUMMARY

A brief summary of the condition of this company indicates the following:

1. Falling current ratio now decidedly below the group.
2. Extremely poor worth debt position—funded debt too high demanding heavy fixed charges.
3. Over investment in plant, which is heavily mortgaged and not productive of proportional sales results equal to the industry figure.
4. High receivables, inventory, and net worth turnovers suggest dependence on velocity to keep going.
5. Need for new capital which would help bolster up worth debt and worth fixed positions.

Specimen Analyses No. 7

Data Submitted by Company

	First year	Second year	Third year	Fourth year	Fifth year
Cash	136,441	125,089	118,830	123,470	109,372
Receivables	554,572	454,815	395,118	350,590	294,801
Inventory	1,351,270	1,211,738	1,072,219	937,711	830,872
Listed securities	1,626				
Total current	2,043,909	1,791,642	1,586,167	1,411,771	1,235,045
Total fixed	562,460	557,724	591,630	597,967	601,211
Total	2,606,369	2,349,366	2,177,797	2,009,738	1,836,256
Payables	1,184,214	929,386	747,050	722,609	569,913
Total current	1,184,214	929,386	747,050	722,609	569,913
Total debt	1,184,214	929,386	747,050	722,609	569,913
Net worth	1,422,155	1,419,980	1,430,747	1,287,129	1,266,343
Total	2,606,369	2,349,366	2,177,797	2,009,738	1,836,256
Sales	4,345,272	4,318,713	4,417,155	3,714,579	3,327,421

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

Current	172	266	192	297	212	271	195	297	216	260
Mdse.-rec.	243	102	263	116	271	108	267	112	281	100
Worth-fixed	252	206	257	233	241	263	215	231	210	245
Worth-debt	120	282	152	261	191	275	178	256	222	235
Sales-rec.	783	414	937	458	1,118	551	1,059	586	1,128	700
Sales-mdse.	321	377	356	374	412	394	396	551	400	640
Sales-fixed	772	449	782	399	746	610	621	737	553	480
Sales-worth	305	178	304	170	308	241	288	233	262	250

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

Specimen Analysis No. 7

This company is compared with industry figures in all five years. However, in only the last two years are the figures really comparable, as a segregation was then made within an industry to obviate too great a difference in conditions under which companies making different types of the same product operated. For this reason, in the industry studies such separation has been made as cotton mills into northern and southern, boot and shoe manufacturers into men's and women's, lumber mills into lumber mill with standing timber and lumber mill and yard. As soon as sufficient data can be obtained other segregations will be made which will greatly enhance the value of the studies. However, for purposes of this analysis, it was considered better to use the figures available for comparison purposes rather than none at all, as even a trade background when not subdivided into finer distinctions of type is better than general impression.

CURRENT RATIO

The current ratio for the company has not been much more than passable on the 2 for 1 standard. It has never reached industry parity, approaching closest to 100 per cent on the last statement. The company's borrowings are much higher than the group, and during the past two years the total current assets are higher than the group, this factor is overshadowed by the heavy borrowings.

The history of the current ratio for the five years is as follows:

Year	Co. ratio	Selected ratio	Rel. Co. to selected
First	172	266	64
Second	192	297	64
Third	212	271	78
Fourth	195	297	65
Fifth	216	260	83

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

Current	172	266	192	297	212	271	195	297	216	260
Mdse.-rec.	243	102	263	116	271	108	267	112	281	100
Worth-fixed	252	206	257	233	241	263	215	231	210	245
Worth-debt	120	282	152	261	191	275	178	256	222	235
Sales-rec.	783	414	937	458	1,118	551	1,059	586	1,128	700
Sales-mdse.	321	377	356	374	412	394	396	551	400	640
Sales-fixed	772	449	782	399	746	610	621	737	553	480
Sales-worth	305	178	304	170	308	241	288	233	262	250

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

The last four years it might be called a 2 for 1 statement, but when this is related to the group, it falls far short of what has seemed reasonable for the industry. A glance at the make-up of the current assets indicates a much larger percentage of merchandise than the group. This high percentage of merchandise and high payables suggests the inquiry as to whether these payables are to the trade or to the banks. While actually it does not make a great deal of difference—they owe the money just the same—it would be interesting to know if the company is taking advantage of discounts by borrowing from their banks. If not, they are losing an opportunity for profit which is a large factor in the successful operation of any business. If, on the other hand, the accounts are due the trade, then the company has a large number of creditors, ~~owns~~ owes more than the industry figures show is typical, and is not taking advantage of the discounts.

The supplementary test of cash and receivables when compared to the group again shows the company at a disadvantage.

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Total	26.51	34.35	24.92	31.15	23.60	36.01	23.58	32.97	22.01	30.29
Current liabilities	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Ratio	58	138	63	149	68	143	65	136	71	127

At no time during the period under analysis does this company pass the "acid test," its nearest approach being only 71 per cent of parity the last year. Therefore, while the company has a 2 for 1 ratio in the last year, it is only 83 per cent of parity and the acid test ratio is only 71 per cent of parity—not a very strong current showing.

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

Current	172	266	192	297	212	271	195	297	216	260
Mdse.-rec.	243	102	263	116	271	108	267	112	281	100
Worth-fixed	252	206	257	233	241	263	215	231	210	245
Worth-debt	120	282	152	261	191	275	178	256	222	235
Sales-rec.	783	414	937	458	1,118	551	1,059	586	1,128	700
Sales-mdse.	321	377	356	374	412	394	396	551	400	640
Sales-fixed	772	449	782	399	746	610	621	737	553	480
Sales-worth	305	178	304	170	308	241	288	233	262	250

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

WORTH-FIXED RATIO

The following tabulation of this ratio is of analytical interest.

Year	Co. ratio	Selected ratio	Co. relation
First..........	252	206	119
Second........	257	233	110
Third.........	241	263	91
Fourth........	215	231	93
Fifth..........	210	245	85

The movement of this ratio for the company is decidedly downward, whereas, the ratio for the industry indicates an upward trend. While there are certain deviations from this in the period, the relation of the ratio for the subject company to the ratio that seems typical for the industry is decidedly downward. This movement is an indicator of considerable importance from a credit standpoint in several ways.

1. The company is investing to a greater proportion in plants and fixed assets than it is adding to its net worth. This is due in a measure to decreases in net worth, but is also due to increases in the actual fixed investment. When considered in connection with the ratio of sales to fixed, this trend is doubly significant. Here one finds that sales were $772 for each $100 invested in fixed assets the first year and that this has fallen to $553. The group figure, on the other hand, has risen from $449 to $480. Not only has the company been increasing its fixed assets disproportionately, but it holds them at a decreasing productivity. In substance the company apparently tried to build up volume by expansion rather than by efficiency of production. This raises a question as to management efficiency and foresight.

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

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	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

2. As contrasted with this tendency the industry as a whole is becoming increasingly conservative in making fixed investments and apparently is effecting a better proportional productivity. The company is going against the industry trend, with the consequent burden of less productive plant investments. This would in the end have an adverse effect on profits and is an indicator of poor management.

WORTH-DEBT RATIO

The figures as submitted show no funded debt, so a funding operation could be resorted to in order to bolster up a declining current ratio. This, of course, would not change the worth-debt ratio. The last year shows this ratio at its best being 94 per cent of parity. The four years previous one would hardly consider the ratio satisfactory, especially when measuring it against the group figures. A comparison runs as follows:

Year	Co.	Group	Rel.
First............	120	282	42
Second...........	152	261	58
Third............	191	275	69
Fourth...........	178	256	69
Fifth............	222	235	94

The improvement in the last year is the result of reduced liabilities, the company having reduced the payables some $160,000. This reliance on borrowings emphasizes the necessity for the conservation of earnings in order that the ownership of the capital at use will remain vested in the stockholders rather than creditors. In round numbers the company has reduced its net worth some $160,000 the biggest drop coming between the third and fourth statements, when it appears that the company took a substantial inventory loss.

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

Current	172	266	192	297	212	271	195	297	216	260
Mdse.-rec.	243	102	263	116	271	108	267	112	281	100
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Sales-fixed	772	449	782	399	746	610	621	737	553	480
Sales-worth	305	178	304	170	308	241	288	233	262	250

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

SALES-RECEIVABLES RATIO

There is no need for much comment on this ratio. The company collects its accounts much faster than the group, which suggests two things.

1. Are the receivables as shown on the statement gross or net? That is, are there any accounts or notes hypothecated and the figure given net after deducting those discounted?
2. Is the company maintaining too rigid a collection policy and thereby losing some profitable business?

If neither of these suggestions is substantiated by a more detailed investigation then the ratio is satisfactory.

SALES-MERCHANDISE RATIO

This ratio, as previously intimated, bears considerable scrutiny. The percentage of merchandise as found on the 100-per-cent statement is far greater than that shown by the group. For the past two years, when a more direct comparison can be made to others in the same line of business, the company's tendency toward inventory speculation is very clearly emphasized.

Year	Co.	Group
Fourth	46.66	35.83
Fifth	45.25	31.49

In the fifth year the company has nearly 50 per cent more merchandise than that shown by the group statement.

The ratios for the five years run as follows:

Year	Co.	Group	Rel.
First	321	377	85
Second	356	374	95
Third	412	394	105
Fourth	396	551	71
Fifth	400	640	62

100 Per Cent Statements

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	5.81	5.32	5.33	5.46	6.38	6.14	6.52	5.96	4.84
Receivables	21.28	28.54	19.60	25.82	18.14	29.63	17.44	26.45	16.05	25.45
Inventory	51.84	32.24	51.58	35.43	49.23	40.54	46.66	35.83	45.25	31.49
Listed securities	.06	.05		.03		.14		.15		.70
Misc.		.08		.14		.19		.37		.69
Total current	78.41	66.72	76.50	66.75	72.83	76.88	70.24	69.32	67.26	63.17
Total fixed	21.59	33.28	23.50	33.25	27.17	23.12	29.76	30.68	32.74	36.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	45.44	23.95	39.56	17.85	34.30	22.36	35.95	22.71	31.04	21.53
Taxes		.15		.62		1.83		.62		.66
Misc.		.68		2.37		.87		.84		1.62
Total current	45.44	24.78	39.56	20.84	34.30	25.06	35.95	24.17	31.04	23.81
Funded debt		.03		.75		.24		3.44		5.95
Total debt	45.44	24.81	39.56	21.59	34.30	25.30	35.95	27.61	31.04	29.76
Reserves		1.54		1.17		.91		3.35		3.95
Net worth	54.56	73.65	60.44	77.24	65.70	73.79	64.05	69.04	68.96	66.29
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	166.72	122.50	183.82	133.60	202.82	155.20	184.83	159.71	181.21	184.82

Ratios

Current	172	266	192	297	212	271	195	297	216	260
Mdse.-rec.	243	102	263	116	271	108	267	112	281	100
Worth-fixed	252	206	257	233	241	263	215	231	210	245
Worth-debt	120	282	152	261	191	275	178	256	222	235
Sales-rec.	783	414	937	458	1,118	551	1,059	586	1,128	700
Sales-mdse.	321	377	356	374	412	394	396	551	400	640
Sales-fixed	772	449	782	399	746	610	621	737	553	480
Sales-worth	305	178	304	170	308	241	288	233	262	250

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	64	16.00	64	16.00	78	19.00	65	16.25	83	20.75
Mdse.-rec.		159		156		160		159		165	
Worth-fixed	15	119	17.85	110	16.50	91	13.65	93	13.95	85	12.75
Worth-debt	25	42	10.50	58	14.50	69	17.25	69	17.25	94	23.50
Sales-rec.	10	147	14.70	151	15.10	151	15.10	145	14.50	138	13.80
Sales-mdse.	10	85	8.50	95	9.50	105	10.50	71	7.10	62	6.20
Sales-fixed	10	142	14.20	149	14.90	119	11.90	84	8.40	114	11.40
Sales-worth	5	142	7.10	145	7.25	122	6.10	120	6.00	105	5.25
Index	100		88.85		93.75		94.00		83.45		93.65

The last year the industry has $640 worth of sales for every $100 invested in inventory, a turnover of better than once every sixty days, while the company with a ratio of 400 only turns its merchandise once every ninety days. There is something wrong with the inventory or the sales policy of this company, and inasmuch as the other sales ratio exceeds the group it is suggested that the fault lies in the inventory.

With sales of $3,327,421, the company should hold inventory of $519,900 to have a turnover of 640 per cent as shown by the group. This is some $310,900 less than the company is holding. It may be that the company has an owned distributor or chain of retail stores which would divide the inventory into small parts, which might account to some extent for the higher inventory holdings, but it is doubtful whether even this explanation is entirely satisfactory. For that reason it is again suggested that the inventory problem be thoroughly investigated. The tendency in this line is from manufacturer-owned retail distributors to the hands of individual distributors. This, with the tendency toward hand-to-mouth buying so prevalent to-day, makes the analysis of an overinventoried position all the more essential, in order that some relationship may be found in the finished, in process, and raw material state of the inventory to determine how much reliance may be placed on it as a current asset.

It may be possible that inventory losses have not been entirely adjusted, leaving the inventory too high. Or the company may have too many dead styles or too much slow moving stock. In this example the analyst should certainly recognize the need of checking the balance of this inventory item.

SUMMARY

1. While 2 for 1, the current ratio is not satisfactory when compared with the group.

2. Worth-debt ratio, while improving, is not so good as the group.
3. The tendency toward a speculation in inventory requires that an analyst investigate the condition of the inventory very carefully.

Specimen Analysis No. 8

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year	Fifth year	Cross-footed period statement
Cash	36,285	34,479	27,776	37,206	51,157	186,903
Receivables	229,437	208,363	220,666	231,171	233,540	1,123,177
Inventory	236,586	208,376	245,367	265,304	255,004	1,210,637
Total current	502,308	451,218	493,809	533,681	539,701	2,520,717
Plant and equipment	115,389	146,884	169,045	170,195	132,037	733,550
Misc.	30,502	28,940	39,708	75,219	65,184	239,553
Total fixed	145,891	175,824	208,753	245,414	197,221	973,103
Total	648,199	627,042	702,562	779,095	736,922	3,493,820
Payables	139,894	152,455	220,539	308,880	255,459	1,077,227
Taxes	12,030	,719	4,083	5,779	7,218	29,829
Misc.	4,170	4,183	3,195	10,261	29,843	51,652
Total current	156,094	157,357	227,817	324,920	292,520	1,158,708
Total debt	156,094	157,357	227,817	324,920	292,520	1,158,708
Net worth	492,105	469,685	474,745	454,175	444,402	2,335,112
Total	648,199	627,042	702,562	779,095	736,922	3,493,820
Sales	2,590,000	2,590,000	2,660,910	3,068,720	3,262,808	14,172,438
Profits		18,500	28,290	35,407	31,448	113,645
Dividends		39,220	23,680	57,578	40,635	161,113

100 Per Cent Statement

	First year Co.	Second year Co.	Third year Co.	Fourth year Co.	Fifth year Co.	Cross-footed period statement
Cash	5.60	5.50	3.95	4.78	6.94	5.35
Receivables	35.39	33.23	31.42	29.67	31.69	32.15
Inventory	36.50	33.23	34.92	34.05	34.60	34.65
Total current	77.49	71.96	70.29	68.50	73.23	72.15
Total fixed	22.51	28.04	29.71	31.50	26.77	27.85
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	21.58	24.31	31.39	39.65	34.67	30.83
Taxes	1.86	.11	.58	.74	.98	.85
Misc.	.64	.67	.46	1.32	4.05	1.48
Total current	24.08	25.09	32.43	41.71	39.70	33.16
Total debt	24.08	25.09	32.43	41.71	39.70	33.16
Net worth	75.92	74.91	67.57	58.29	60.30	66.84
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	399.57	413.05	378.74	393.88	442.76	405.64

Ratios

Current	321	286	216	164	184	217
Mdse.-rec.	103	100	111	114	109	108
Worth-fixed	336	266	227	184	224	239
Worth-debt	314	297	207	139	151	201
Sales-rec.	1,129	1,243	1,205	1,327	1,397	1,261
Sales-mdse.	1,094	1,243	1,084	1,157	1,279	1,170
Sales-fixed	1,775	1,473	1,274	1,250	1,653	1,456
Sales-worth	526	552	560	675	734	607

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	133	33.25	124	31.00	100	25.00	75	18.75	85	21.25
Mdse.-rec.		95		92		103		105		101	
Worth-fixed	15	129	19.35	111	16.65	95	14.25	77	11.55	93	13.95
Worth-debt	25	136	34.00	133	33.25	103	25.75	69	17.25	75	18.75
Sales-rec.	10	89	8.90	98	9.80	95	9.50	105	10.50	110	11.00
Sales-mdse	10	93	9.30	106	10.60	92	9.20	99	9.90	109	10.90
Sales-fixed	10	118	11.80	101	10.10	87	8.70	85	8.50	112	11.20
Sales-worth	5	86	4.30	90	4.50	92	4.60	111	5.55	118	5.90
	100		120.90		115.90		97.00		82.00		92.95

Specimen Analysis No. 8

It is the opinion of the writers that there are a number of ways by which to analyze the financial condition of a company. The following exhibit is the five-year statements of a company engaged in a wholesale business. While the cold-blooded analysis of the figure facts may not disclose any alarming conditions in the mind of the reader, there are several points of interest in the ratio analysis and more particularly in the dividend policy of the company. There are no type figures available in this industry, so the company has been set into comparison with its own average position, which is internal analysis. This has been obtained by cross-footing the dollar statements. The 100-per-cent statements have been developed for each year as well as the 100-per-cent cross-footed statement. The ratios of the cross-footed statement are used as a base.

CURRENT RATIO

This ratio took a rather headlong decline during the first four years under analysis, recovering slightly the last year, but still considerably below the average period position of 217. While the ratio of 184 may be satisfactory in some lines of business, it is doubtful whether it would be in this industry where such high turnovers are found. The nature of this industry necessitates rapid turnovers, so an analyst should expect a much better than 2 for 1 statement.

In connection with the current ratio, it would be well to apply the acid test also. There has been a steady decline in this ratio also until in the fourth statement cash and receivables only amount to 34.45 against current liabilities of 41.71 as indicated on the 100-per-cent statement. There is also an improvement following the rise in the current ratio on the last statement, but the acid-test ratio is still below parity. The acid-test ratio for the last year of the company is 97 per cent and for the period statement 113 per

100 Per Cent Statement

	First year Co.	Second year Co.	Third year Co.	Fourth year Co.	Fifth year Co.	Cross-footed period statement
Cash	5.60	5.50	3.95	4.78	6.94	5.35
Receivables	35.39	33.23	31.42	29.67	31.69	32.15
Inventory	36.50	33.23	34.92	34.05	34.60	34.65
Total current	77.49	71.96	70.29	68.50	73.23	72.15
Total fixed	22.51	28.04	29.71	31.50	26.77	27.85
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	21.58	24.31	31.39	39.65	34.67	30.83
Taxes	1.86	.11	.58	.74	.98	.85
Misc.	.64	.67	.46	1.32	4.05	1.48
Total current	24.08	25.09	32.43	41.71	39.70	33.16
Total debt	24.08	25.09	32.43	41.71	39.70	33.16
Net worth	75.92	74.91	67.57	58.29	60.30	66.84
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	399.57	413.05	378.74	393.88	442.76	405.64

Ratios

Current	321	286	216	164	184	217
Mdse.-rec.	103	100	111	114	109	108
Worth-fixed	336	266	227	184	224	239
Worth-debt	314	297	207	139	151	201
Sales-rec.	1,129	1,243	1,205	1,327	1,397	1,261
Sales-mdse.	1,094	1,243	1,084	1,157	1,279	1,170
Sales-fixed	1,775	1,473	1,274	1,250	1,653	1,456
Sales-worth	526	552	560	675	734	607

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	133	33.25	124	31.00	100	25.00	75	18.75	85	21.25
Mdse.-rec.		95		92		103		105		101	
Worth-fixed	15	129	19.35	111	16.65	95	14.25	77	11.55	93	13.95
Worth-debt	25	136	34.00	133	33.25	103	25.75	69	17.25	75	18.75
Sales-rec.	10	89	8.90	98	9.80	95	9.50	105	10.50	110	11.00
Sales-mdse	10	93	9.30	106	10.60	92	9.20	99	9.90	109	10.90
Sales-fixed	10	118	11.80	101	10.10	87	8.70	85	8.50	112	11.20
Sales-worth	5	86	4.30	90	4.50	92	4.60	111	5.55	118	5.90
	100		120.90		115.90		97.00		82.00		92.95

cent. It may be said, therefore, that while the current ratio is fairly near 200 per cent it is inadequate.

WORTH-FIXED RATIO

This ratio seems reasonably satisfactory. It is 93 per cent of parity on the last year and a ratio of 224 seems to provide a sufficient amount of capital over and above the fixed asset investment for current operations of the business. It is noted here that the dollar figures increased $100,000 during the first four years, but declined $48,000 the fifth year. This in itself might prompt the analyst to search out the reason for this movement and its effect on net worth.

WORTH-DEBT RATIO

The first point to be noticed about the net worth is the actual decline in dollars over the five years of some $48,000. In comparison with this an increase of $136,000 is found in current borrowings which in turn have been reduced $32,000 during the last year. The ratio of the average period statement is 201. The relationship of this ratio in the last two years to this base is 69 and 75, decidedly below parity, and a bad showing.

A glance at the 100-per-cent statement shows a 20 per cent decline in the percentage of net worth to total footings from 75.92 to 60.30. This further emphasizes the greater reliance on borrowings to conduct the business.

SALES RATIOS

Little need be said about these ratios. They are high and in accordance with what would be expected in this industry. There is a turnover of receivables and inventory of slightly more than once a month. The volume of sales compared with total footings is high, as shown by the 100-per-cent sales figures, which average $405.64 for each $100 of total

100 Per Cent Statement

	First year Co.	Second year Co.	Third year Co.	Fourth year Co.	Fifth year Co.	Cross-footed period statement
Cash	5.60	5.50	3.95	4.78	6.94	5.35
Receivables	35.39	33.23	31.42	29.67	31.69	32.15
Inventory	36.50	33.23	34.92	34.05	34.60	34.65
Total current	77.49	71.96	70.29	68.50	73.23	72.15
Total fixed	22.51	28.04	29.71	31.50	26.77	27.85
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	21.58	24.31	31.39	39.65	34.67	30.83
Taxes	1.86	.11	.58	.74	.98	.85
Misc.	.64	.67	.46	1.32	4.05	1.48
Total current	24.08	25.09	32.43	41.71	39.70	33.16
Total debt	24.08	25.09	32.43	41.71	39.70	33.16
Net worth	75.92	74.91	67.57	58.29	60.30	66.84
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sales	399.57	413.05	378.74	393.88	442.76	405.64

Ratios

Current	321	286	216	164	184	217
Mdse.-rec.	103	100	111	114	109	108
Worth-fixed	336	266	227	184	224	239
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Sales-rec.	1,129	1,243	1,205	1,327	1,397	1,261
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Sales-fixed	1,775	1,473	1,274	1,250	1,653	1,456
Sales-worth	526	552	560	675	734	607

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	133	33.25	124	31.00	100	25.00	75	18.75	85	21.25
Mdse.-rec.		95		92		103		105		101	
Worth-fixed	15	129	19.35	111	16.65	95	14.25	77	11.55	93	13.95
Worth-debt	25	136	34.00	133	33.25	103	25.75	69	17.25	75	18.75
Sales-rec.	10	89	8.90	98	9.80	95	9.50	105	10.50	110	11.00
Sales-mdse	10	93	9.30	106	10.60	92	9.20	99	9.90	109	10.90
Sales-fixed	10	118	11.80	101	10.10	87	8.70	85	8.50	112	11.20
Sales-worth	5	86	4.30	90	4.50	92	4.60	111	5.55	118	5.90
	100		120.90		115.90		97.00		82.00		92.95

footings for the period. This high volume is further reflected in a high turnover of plant and invested capital, the latter turning an average of once every two months.

PROFIT AND DIVIDEND FIGURES

It is unfortunate that the profit and dividend figures were not available in the first year, so that the picture would be complete. However, some rather interesting comments can be made from the data submitted.

The profits for the four years amount to $113,645. During the same period the dividends amounted to $161,113, an excess of dividends over profits of $47,468. The net worth has decreased from $492,105 on the first statement to $444,402, or $47,703, almost exactly the amount by which the dividends exceed the profits for the period. The stockholders may be trying to liquidate their holdings by repaying themselves in dividends. This would be a rather slow process if successful eventually. In the carrying out of such a policy the management would rob the company of capital, so that its operations would have to be contracted to such a point that failure rather than liquidation would be the result. Comment was made in the chapter on Supplementary Ratios on the variations found in reporting net profits. The net profits of the company under consideration are apparently before dividends.

It is suggested that instead of liquidating the net worth by the milking process, the company would have materially strengthened its position if it had kept the dividends in the business, thereby improving its current and worth-debt positions.

The dividends which have been declared when compared with the net worth show the following percentages:

First year	8.5
Second year	5.0
Third year	12.6
Fourth year	9.1

100 Per Cent Statement

	First year Co.	Second year Co.	Third year Co.	Fourth year Co.	Fifth year Co.	Cross-footed period statement
Cash	5.60	5.50	3.95	4.78	6.94	5.35
Receivables	35.39	33.23	31.42	29.67	31.69	32.15
Inventory	36.50	33.23	34.92	34.05	34.60	34.65
Total current	77.49	71.96	70.29	68.50	73.23	72.15
Total fixed	22.51	28.04	29.71	31.50	26.77	27.85
Total	100.00	100.00	100.00	100.00	100.00	100.00
Payables	21.58	24.31	31.39	39.65	34.67	30.83
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Sales-mdse.	1,094	1,243	1,084	1,157	1,279	1,170
Sales-fixed	1,775	1,473	1,274	1,250	1,653	1,456
Sales-worth	526	552	560	675	734	607

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	133	33.25	124	31.00	100	25.00	75	18.75	85	21.25
Mdse.-rec.		95		92		103		105		101	
Worth-fixed	15	129	19.35	111	16.65	95	14.25	77	11.55	93	13.95
Worth-debt	25	136	34.00	133	33.25	103	25.75	69	17.25	75	18.75
Sales-rec.	10	89	8.90	98	9.80	95	9.50	105	10.50	110	11.00
Sales-mdse	10	93	9.30	106	10.60	92	9.20	99	9.90	109	10.90
Sales-fixed	10	118	11.80	101	10.10	87	8.70	85	8.50	112	11.20
Sales-worth	5	86	4.30	90	4.50	92	4.60	111	5.55	118	5.90
	100		120.90		115.90		97.00		82.00		92.95

These percentages are based on the entire net worth and not on the capital stock alone, so the return to the stockholders is much higher for their per share holdings.

If the amount of the dividends is added to the net worth the debt alone could be reduced by a similar amount. On this new basis the company's statement would be as follows:

	Cross-footed period statement	Fifth year
Total current assets	2,520,717	539,701
" fixed	973,103	197,221
Total	3,493,820	736,922
Total current liabilities	997,595	131,407
Net worth	2,496,225	605,515
Total	3,493,820	736,922

These ratios naturally improve the company's position greatly, as noted in the following computation when the improved ratios are substituted in both the last statement and period statement.

	Co.	Base	Rel.	Value
Current	410	252	139	34.75
Worth—fixed	307	266	117	17.55
Worth—debt	461	250	146	36.50
Sales—rec.	1397	1261	110	11.00
Sales—mdse.	1279	1170	109	10.90
Sales—fixed	1653	1456	112	11.20
Sales—worth	538	567	94	4.70
				126.60

An index number of 126.60 is a considerable betterment, and while it is probably not necessary to go to such an extreme, certainly a part of the earnings should have been kept in the business and not all of the profits and part of the accumulated surplus dissipated in dividends.

SUMMARY

1. Not a sufficiently high current position considering nature of the business.
2. Worth-debt position somewhat low.
3. Reduction of net worth through dividends should be discouraged.

Specimen Analysis No. 9

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year	Fifth year
Cash	728,877	1,288,891	713,385	601,617	745,741
Rec.	790,412	644,959	727,642	851,336	991,214
Inventory	1,547,524	1,317,404	1,381,300	1,475,860	1,520,162
Listed securities	11,119	4,733	4,686	4,928	—
Misc.	—	—	—	—	—
Total current	3,077,932	3,255,987	2,827,013	2,933,741	3,257,117
Plant and equipment	2,256,220	2,551,060	2,526,153	2,576,062	2,503,866
Misc.	838,519	712,578	716,612	683,530	541,461
Total fixed	3,094,739	3,263,638	3,242,765	3,259,592	3,045,327
Goodwill					
Total	6,172,671	6,519,625	6,069,778	6,193,333	6,302,444
Payables	2,054,261	917,768	578,232	721,864	1,355,883
Taxes	36,675	44,316			
Misc.	10,170	10,181	26,120	59,124	58,120
Total current	2,101,106	972,265	604,352	780,988	1,414,003
Funded	511,340	1,850,000	1,850,000	1,770,783	1,767,453
Total debt	2,612,446	2,822,265	2,454,352	2,551,771	3,181,456
Reserves	606,089	750,140	667,036	710,733	802,387
Capital stock pfd.	1,567,690	1,850,000	1,790,726	1,754,651	1,718,539
Capital stock com.	851,000	851,000	851,000	851,000	92,500
Surplus	535,446	246,220	306,664	325,178	507,562
Net worth	2,954,136	2,947,220	2,948,390	2,930,829	2,318,601
Total	6,172,671	6,519,625	6,069,778	6,193,333	6,302,444
Sales	17,297,500	15,868,079	16,568,526	17,127,596	21,444,756

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
Listed secur.	.18	.74	.07	1.82	.08	1.46	.08	.80		.02
Misc.		.06		.08		.23		.22		.02
Total current	49.86	57.27	49.94	50.55	46.58	49.01	47.37	47.92	51.68	47.39
Total fixed	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
Taxes	.59	.07	.68	.08		.07		.12		1.97
Misc.	.17	.29	.15	.22	.43	.22	.95	1.61	.93	.18
Total current	34.04	22.09	14.91	15.31	9.96	15.50	12.61	13.36	22.44	12.44
Funded debt	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Total debt	42.32	48.75	43.29	42.13	40.44	42.99	41.20	39.27	50.48	38.82
Reserves	9.82	1.59	11.50	1.70	10.99	1.76	11.48	1.56	12.73	1.69
Net worth	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	280.23	182.11	243.39	203.95	272.97	210.71	276.55	202.98	340.26	231.74

Ratios

Current	146	233	335	298	467	274	375	321	230	265
Mdse.-rec.	196	83	204	126	189	139	173	140	153	125
Worth-fixed	95	136	90	119	91	128	90	124	76	125
Worth-debt	113	106	104	148	120	145	115	194	73	165
Sales-rec.	2,189	1,037	2,461	1,280	2,276	2,141	2,011	1,538	2,163	1,590
Sales-mdse.	1,118	899	1,204	950	1,199	1,119	1,160	1,246	1,411	1,270
Sales-fixed	559	536	486	505	511	508	525	529	704	575
Sales-worth	585	414	538	457	562	452	584	353	925	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	62	15.50	111	27.75	141	35.25	115	28.75	87	21.75
Mdse.-rec.		158		138		127		119		118	
Worth-fixed	15	70	10.50	75	11.25	71	10.65	72	10.80	61	9.15
Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
Sales-worth	5	129	6.45	115	5.75	120	6.00	140	7.00	157	7.85
Index	100		96.65		98.75		104.05		92.90		85.45

Specimen Analysis No. 9

This company is in an industry where turnovers are high, as will be noted by the sales ratios. There is a considerable amount of competition and the margin of profit per dollar of sales small, as is frequently the case when turnovers are high.

The first point to note is the change in capital structure between the fourth and fifth statements. The $851,000 of common stock has been changed into no-par stock, thereby eliminating the common stock and adding $842,490 to the capital surplus account. There is, however, a discrepancy between the net worth in the last two statements of $612,228 to be explained. Detailed operating figures and a complete reconcilement of surplus should be demanded. The drop of more than 20 per cent in net worth and a substantial increase in debts certainly require explanation.

CURRENT RATIO

This company is introduced as a good example because a creditor placing faith in the current ratio as the sole measure of goodness might have a much greater faith in the company than the figures really warrant when fully analyzed. The tabulation of the current ratio is as follows:

Year	Co.	Group	Rel.
First	146	233	62
Second	335	298	111
Third	467	274	141
Fourth	375	321	115
Fifth	230	265	87

The current ratio on the first statement is very low, 146 against a group of 233, or 62 per cent. In order to bolster up this condition the company funded its current obligations, which raised that ratio to 335 on the second statement, and carried it to 467 on the third. An examination of

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
Listed secur.	.18	.74	.07	1.82	.08	1.46	.08	.80		.02
Misc.		.06		.08		.23		.22		.02
Total current	49.86	57.27	49.94	50.55	46.58	49.01	47.37	47.92	51.68	47.39
Total fixed	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
Taxes	.59	.07	.68	.08		.07		.12		1.97
Misc.	.17	.29	.15	.22	.43	.22	.95	1.61	.93	.18
Total current	34.04	22.09	14.91	15.31	9.96	15.50	12.61	13.36	22.44	12.44
Funded debt	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Total debt	42.32	48.75	43.29	42.13	40.44	42.99	41.20	39.27	50.48	38.82
Reserves	9.82	1.59	11.50	1.70	10.99	1.76	11.48	1.56	12.73	1.69
Net worth	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	280.23	182.11	243.39	203.95	272.97	210.71	276.55	202.98	340.26	231.74

Ratios

Current	146	233	335	298	467	274	375	321	230	265
Mdse.-rec.	196	83	204	126	189	139	173	140	153	125
Worth-fixed	95	136	90	119	91	128	90	124	76	125
Worth-debt	113	106	104	148	120	145	115	194	73	165
Sales-rec.	2,189	1,037	2,461	1,280	2,276	2,141	2,011	1,538	2,163	1,590
Sales-mdse.	1,118	899	1,204	950	1,199	1,119	1,160	1,246	1,411	1,270
Sales-fixed	559	536	486	505	511	508	525	529	704	575
Sales-worth	585	414	538	457	562	452	584	353	925	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	62	15.50	111	27.75	141	35.25	115	28.75	87	21.75
Mdse.-rec.		158		138		127		119		118	
Worth-fixed	15	70	10.50	75	11.25	71	10.65	72	10.80	61	9.15
Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
Sales-worth	5	129	6.45	115	5.75	120	6.00	140	7.00	157	7.85
Index	100		96.65		98.75		104.05		92.90		85.45

the indenture in one of the bond issues indicates that a reduction in the bonds is required yearly. The funded debt remains the same for the second and third statements. Then it shows a moderate reduction for the fourth statement and again remains almost stationary for the fifth statement. However, the fourth statement shows a substantial increase in current borrowings of about $180,000, while the last statement shows an increase of $634,000 in round figures. On a percentage basis, referring to the 100-per-cent statement, the total current liabilities the third year were $9.96 in every $100 of total footings. The fourth year they had jumped to $12.61 and the last year to $22.44 in every $100 of total footings. The current debt increases more rapidly than the reduction of the funded debt. The practice of funding debts to establish a current ratio and almost immediately borrowing currently until the ratio is again materially lowered is one of the vicious practices in that the debt in funded form seems forgotten.

Another strain on the current position of this company is the requirement that a percentage of the preferred stock must be retired the first of each year if offered at par. This adds an additional burden to an already overburdened company. In fact, this practically makes this percentage a potential current liability, reducing the seeming current strength.

It is possible that some one may suggest that the high percentage of current liabilities may be excused because of the large percentage of cash, which runs 11.81, 19.77, 11.75, 9.71, and 11.83 for the five years. However, if the acid test is applied to the figure in the last statement it shows the following result:

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
Listed secur.	.18	.74	.07	1.82	.08	1.46	.08	.80		.02
Misc.		.06		.08		.23		.22		.02
Total current	49.86	57.27	49.94	50.55	46.58	49.01	47.37	47.92	51.68	47.39
Total fixed	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
Taxes	.59	.07	.68	.08		.07		.12		1.97
Misc.	.17	.29	.15	.22	.43	.22	.95	1.61	.93	.18
Total current	34.04	22.09	14.91	15.31	9.96	15.50	12.61	13.36	22.44	12.44
Funded debt	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Total debt	42.32	48.75	43.29	42.13	40.44	42.99	41.20	39.27	50.48	38.82
Reserves	9.82	1.59	11.50	1.70	10.99	1.76	11.48	1.56	12.73	1.69
Net worth	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	280.23	182.11	243.39	203.95	272.97	210.71	276.55	202.98	340.26	231.74

Ratios

Current	146	233	335	298	467	274	375	321	230	265
Mdse.-rec.	196	83	204	126	189	139	173	140	153	125
Worth-fixed	95	136	90	119	91	128	90	124	76	125
Worth-debt	113	106	104	148	120	145	115	194	73	165
Sales-rec.	2,189	1,037	2,461	1,280	2,276	2,141	2,011	1,538	2,163	1,590
Sales-mdse.	1,118	899	1,204	950	1,199	1,119	1,160	1,246	1,411	1,270
Sales-fixed	559	536	486	505	511	508	525	529	704	575
Sales-worth	585	414	538	457	562	452	584	353	925	400

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	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	62	15.50	111	27.75	141	35.25	115	28.75	87	21.75
Mdse.-rec.		158		138		127		119		118	
Worth-fixed	15	70	10.50	75	11.25	71	10.65	72	10.80	61	9.15
Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
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Index	100		96.65		98.75		104.05		92.90		85.45

	Co.	Group
Cash	11.83%	3.22%
Receivables	15.73	17.21
	27.56%	20.43%
Current liabilities	22.44%	12.44%
Per cent cash and rec. to current liabilities	122%	164%

It would seem that the company might be keeping these substantial bank balances either by request or in order to keep their banks passive to the real situation. A bank analyst certainly should not overlook a poor condition because of the comfortable balances a company may have on deposit.

WORTH-DEBT

A slang phrase aptly describes this ratio: "it is getting no better fast." Total debt approximates the total debt as shown by the group 100-per-cent figures until the last statement, when there is a considerable increase on a percentage basis. For the five years the total debt compared to the group runs as follows:

PERCENTAGE OF DEBT AND WORTH-DEBT RATIO

	Percentage of debt		Worth-debt ratio		
Year	Co.	Group	Co.	Group	Rel. to group
First	42.32	48.75	113	106	106
Second	43.29	42.13	104	148	70
Third	40.44	42.99	120	145	83
Fourth	41.20	39.27	115	194	59
Fifth	50.48	38.82	73	165	44

It is noted that there is a steady decline from the high point the third year of 120 to a dangerous proportion of owned to borrowed capital the last year of only 73 per cent. The owners are only putting up 73 per cent as much of the

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
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Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
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capital at use in the business as the creditors—not a very safe condition for the creditors.

It is assumed for the sake of argument that they are correct who say that the worth and reserves should be added together, that reserves are merely a segregation of net worth and we have the following condition in the last year.

	Co.	Group
Reserves	12.73	1.69
Net worth	36.79	59.49
Total	49.52	61.18
Total debt	50.48	38.82
Per cent reserves and net worth to total debt	97	157

This further shows the weak condition of this company—its overreliance on borrowings to secure the capital at use necessary to its operation. If any adverse condition in business should develop, this company, because of its dependence on borrowed money, might be in a sad predicament. Reference is made again to previous comments on the sinking fund and preferred stock requirements which further aggravates the weak capital condition and indicates weakness in financing.

WORTH-FIXED

This ratio also does not measure up to the group, a comparison of the ratios of the company and group running as follows:

Year	Co. ratio	Selected ratio	Rel. Co. ratio to selected
First	95	136	70
Second	90	119	75
Third	91	128	71
Fourth	90	124	72
Fifth	76	125	61

In the organization of a company it is generally thought

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
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Reserves	9.82	1.59	11.50	1.70	10.99	1.76	11.48	1.56	12.73	1.69
Net worth	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
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Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
Sales-worth	5	129	6.45	115	5.75	120	6.00	140	7.00	157	7.85
Index	100		96.65		98.75		104.05		92.90		85.45

that the net worth should be sufficient to purchase the fixed assets, with some margin left over to supply part of the working capital. The industry shows this to be the case in the ratios listed above, ranging from a low of $119 of worth for every $100 of fixed assets to $136. There is a substantial margin above the investment on the last statement when, after the investment in fixed assets there remains $25 in every $100 to use in the current operation of the business. In comparison with this the company ratio of 76 indicates that it is borrowing $24 in addition to the invested capital of $76 in order to purchase their fixed assets.

The relationship of 61 per cent the last year between the company's ratio and the selected ratio shows clearly how weak this company really is in capital supply for fixed investment.

NET WORTH TO NET FIXED ASSETS

For those who believe that the funded debt should be taken into consideration in any computation involving fixed assets the following computations are offered from the 100-per-cent statement, calling attention to the fact that this company's funded debt is higher in all but the first year than that shown by the group.

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Fixed assets......	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Funded debt.....	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Net fixed........	41.86	16.07	21.68	22.63	22.94	23.50	24.04	26.17	20.28	26.23
Net worth.......	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
Net worth to net fixed..........	114%	308%	208%	248%	211%	235%	197%	226%	181%	227%

This table further indicates how badly the company is tied up in fixed assets. The funded debt has been deducted from fixed assets and a ratio computed, the net worth to net fixed assets, and in every year the company has a smaller margin of its own capital free for current operation than that shown by the group.

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
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Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
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Index	100		96.65		98.75		104.05		92.90		85.45

An additional test to determine the extent to which the fixed assets are mortgaged is a proper precaution in such a case. In computing this proportion it is necessary to take the entire fixed assets, which may include items other than actual plant, but for purposes here this supplementary test is comparable and may prove interesting.

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Fixed assets......	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Funded debt.....	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Ratio funded to fixed assets....	16%	62%	56%	54%	57%	54%	54%	49%	58%	50%

From the second to fifth statements, after funding operations, inclusive, the company has a larger percentage of its fixed assets mortgaged than has the group. The last two years show the company has mortgaged its plant 5 and 8 per cent more than the group. This, in the face of the lower worth-to-fixed and worth-to-net-fixed ratios, further substantiates the belief that the company is overinvested in plant.

VELOCITY RATIOS

This company is apparently depending on momentum to keep its head above water. Its sales on the 100-per-cent statement indicate a higher volume when compared with the industry. Its sales are higher than the group every year. This volume seems to have been secured at the sacrifice of profits, as there is a decrease in the net-worth figure the first four years, and a very decided drop the last year to which reference has previously been made.

SALES TO RECEIVABLES

Sales to receivables are substantially above the group figure. The subject seems to collect its receivables every

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Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
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Total fixed	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
Taxes	.59	.07	.68	.08		.07		.12		1.97
Misc.	.17	.29	.15	.22	.43	.22	.95	1.61	.93	.18
Total current	34.04	22.09	14.91	15.31	9.96	15.50	12.61	13.36	22.44	12.44
Funded debt	8.28	26.66	28.38	26.82	30.48	27.49	28.59	25.91	28.04	26.38
Total debt	42.32	48.75	43.29	42.13	40.44	42.99	41.20	39.27	50.48	38.82
Reserves	9.82	1.59	11.50	1.70	10.99	1.76	11.48	1.56	12.73	1.69
Net worth	47.86	49.66	45.21	56.17	48.57	55.25	47.32	59.17	36.79	59.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	280.23	182.11	243.39	203.95	272.97	210.71	276.55	202.98	340.26	231.74

Ratios

Current	146	233	335	298	467	274	375	321	230	265
Mdse.-rec.	196	83	204	126	189	139	173	140	153	125
Worth-fixed	95	136	90	119	91	128	90	124	76	125
Worth-debt	113	106	104	148	120	145	115	194	73	165
Sales-rec.	2,189	1,037	2,461	1,280	2,276	2,141	2,011	1,538	2,163	1,590
Sales-mdse.	1,118	899	1,204	950	1,199	1,119	1,160	1,246	1,411	1,270
Sales-fixed	559	536	486	505	511	508	525	529	704	575
Sales-worth	585	414	538	457	562	452	584	353	925	400

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	62	15.50	111	27.75	141	35.25	115	28.75	87	21.75
Mdse.-rec.		158		138		127		119		118	
Worth-fixed	15	70	10.50	75	11.25	71	10.65	72	10.80	61	9.15
Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
Sales-worth	5	129	6.45	115	5.75	120	6.00	140	7.00	157	7.85
Index	100		96.65		98.75		104.05		92.90		85.45

seventeen days in 1925 against every twenty-three days for the industry. This rapid collection may be due to the pressure it is under to pay its own obligations, although its rather high cash position should enable it to take advantage of any discounts if the cash is really free. Even though their sales are high, they may be losing profitable business by maintaining too rigid a collection policy.

SALES TO MERCHANDISE

This relative measure of inventory turnover is higher in the company than the group in the last four of the five years. Inventory is turned every twenty-five days against the group relative turnover of once a month in 1925. As in the case of the receivables this is due primarily to higher sales volume. The profit in this industry is in the number of turnovers. If the company is operating at a profit, this profit can be smaller per dollar of sales because of more rapid turnovers. This margin of profit runs around one to one and a half cent in each dollar of sales in this industry. The higher sales volume per dollar of footings as found on the 100-per-cent statement is not reflected in any bettering of the company's worth. A logical question arises as to why profits do not show themselves. It looks like a case in which volume rather than profitable merchandising has been sought by the management. Certainly this is not a satisfactory condition.

SALES-FIXED RATIO

In three of the five years under analysis the company's ratio has exceeded the group, and in the last year is 129 points higher. At no time does it vary greatly from the group excepting the last year, when sales volume is so greatly in excess of the group. In a measure this offsets the criticism against too great a fixed asset investment, except that profits have not resulted from this feverish activity.

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
Listed secur.	.18	.74	.07	1.82	.08	1.46	.08	.80		.02
Misc.		.06		.08		.23		.22		.02
Total current	49.86	57.27	49.94	50.55	46.58	49.01	47.37	47.92	51.68	47.39
Total fixed	50.14	42.73	50.06	49.45	53.42	50.99	52.63	52.08	48.32	52.61
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	33.28	21.73	14.08	15.01	9.53	15.21	11.66	11.63	21.51	10.29
Taxes	.59	.07	.68	.08		.07		.12		1.97
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Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
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SALES-WORTH RATIO

The company at first glance apparently has an excellent relationship in this ratio measured against the group. The ratios are so computed that an increase in the ratio should indicate a betterment. Some allowance must be made in this case in interpreting this ratio, however. The decreasing percentage of net worth in the company when compared to the group naturally would lead to a higher turnover even if the sales volume were the same. In this company the sales volume, being so much higher, naturally causes an even higher net worth turnover and an apparently better condition. If the company's net worth were the same percentage as the group or 59.49, in the last statement the net worth turnover would still be better than the group. Attention is called to the uselessness of this volume and high turnover as measured by the lack of profits.

As a matter of cold analysis this high ratio of sales to net worth, unaccompanied by proportional profits, suggests overtrading. The last year this is in a marked degree. It might seem that the height of this ratio, in this instance, suggests weakness of management rather than strength. In a competitive endeavor to secure business the company has taken it at prices that do not return a profit and, therefore, it is simply fabricating and selling to the advantage of its customers rather than benefiting itself.

It is the general consensus of opinion that an industry which is extremely liquid does not require a high current ratio. The writers do not coincide with this rather generally accepted theory, because when merchandising and collection are both rapid processes, funds should be constantly accruing to a company through the process of sale. With capital tied up for only a short time in the processes of business from purchase of raw material to collection of sales, a company should be under less necessity of borrowing, and

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	11.81	5.39	19.77	7.69	11.75	4.74	9.71	3.52	11.83	3.22
Receivables	12.80	29.25	9.89	19.48	11.99	19.59	13.75	16.46	15.73	17.21
Inventory	25.07	21.83	20.21	21.48	22.76	22.99	23.83	26.92	24.12	26.92
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Worth-fixed	15	70	10.50	75	11.25	71	10.65	72	10.80	61	9.15
Worth-debt	25	106	26.50	70	17.50	83	20.75	59	14.75	44	11.00
Sales-rec.	10	153	15.30	148	14.80	106	10.60	124	12.40	127	12.70
Sales-mdse.	10	120	12.00	121	12.10	107	10.70	93	9.30	110	11.10
Sales-fixed	10	104	10.40	96	9.60	101	10.10	99	9.90	119	11.90
Sales-worth	5	129	6.45	115	5.75	120	6.00	140	7.00	157	7.85
Index	100		96.65		98.75		104.05		92.90		85.45

should show higher current ratios. This opinion seems to be substantiated by the group figures in this instance. Undercapitalization and overtrading have here offset the expected current ratio for this company.

SUMMARY

The following general summary can be made at this time:

1. Current ratio and acid-test ratio decidedly below the group.
2. Worth-fixed ratio indicates overinvestment in plant substantiated by worth-to-net-fixed ratio and per cent of fixed-assets-mortgaged ratio.
3. Worth-debt ratio well below group, showing too much reliance on borrowed capital and need for additional capital—a refinancing.
4. High turnovers as measured by sales ratio, reflect high sales volume far in excess of group. High volume, however, does not bring about profits in this company.

The index figure is held up by the sales ratios, but has declined nearly twenty points below the peak reached by the action of the funding operations. It has made two substantial and continuous declines. If in the subsequent year a further decline of ten points should be made, the company's position would be serious. The warnings, however, are out in spite of a current ratio of 230 per cent, or 2.3 to 1, which is not as much below the group figure as the index. These warnings point to weakness in management, and a revamping of this so as to effect profitable operations may reverse the trend. The creditor who lends by the rule of 2 for 1 and believes a lower ratio safe in a liquid industry would, however, have no real appreciation of the weakness of his risk.

Specimen Analysis No. 10

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year	Fifth year	
Cash	92,886	60,811	68,432	86,451	101,154	
Receivables	283,923	233,670	324,603	320,362	304,449	
Inventory	607,652	434,944	401,513	541,028	441,577	
Listed securities						
Misc.						
Total current	984,461	729,425	794,548	947,841	847,180	
Plant and equipment	22,707	20,483	19,715	16,991	14,262	
Misc.	35,033	30,467	36,702	41,813	40,587	
Total fixed	57,740	50,950	56,417	58,804	54,849	
Goodwill	462,500	462,500	462,500	462,500	462,500	
Total Less Goodwill	1,042,201	780,375	850,965	1,006,645	902,029	
Payables	397,090	266,649	299,697	451,664	393,797	
Taxes	32,424	13,314	13,296	1,345		
Misc.			27,750			
Total current	429,514	279,963	340,743	453,009	393,797	
Funded						
Total debt	429,514	279,963	340,743	453,009	393,797	
Reserves						
Capital stock {com. 462,500 pfd. 462,500	925,000	925,000	925,000	925,000	925,000	
Surplus	150,187	37,912	47,722	91,136	45,732	
Net worth-ex. Goodwill	612,687	500,412	510,222	553,636	508,232	
Total	1,042,201	780,375	850,965	1,006,645	902,029	
Sales	2,283,394	1,552,412	1,736,519	1,823,175	1,709,376	
Profits	*49,067*	*76,111*	31,900	58,400	*3,779*	*128,957*
						90,300
					Net Loss	*38,657*

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Inventory	58.31	38.70	55.74	40.92	47.18	38.41	53.75	43.90	48.95	38.89
Listed securities		.28		.25		.11		.23		.07
Misc.		.53		.38		.23		.81		.47
Total current	94.46	87.90	93.47	87.00	93.37	83.77	94.16	88.67	93.91	84.98
Total fixed	5.54	12.10	6.53	13.00	6.63	16.23	5.84	11.33	6.09	15.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
Taxes	3.11	.62	1.71	.38	1.56	.36	.13	.80		.68
Misc.		2.40		2.24	3.26	2.01		2.03		2.39
Total current	41.21	42.97	35.88	40.77	40.04	35.94	45.00	40.25	43.66	30.08
Funded debt		1.46		2.03		3.09		.78		3.83
Total debt	41.21	44.43	35.88	42.80	40.04	39.03	45.00	41.03	43.66	33.91
Reserves		1.99		.58		.59		.94		.67
Net worth	58.79	53.58	64.12	56.62	59.96	60.38	55.00	58.03	56.34	65.42
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	219.09	237.11	198.93	182.77	204.06	187.21	181.11	195.12	189.50	180.88

Ratios

Current	229	211	260	211	233	218	209	219	215	248
Mdse.-rec.	214	88	186	98	124	102	169	113	145	93
Worth-fixed	1,061	488	982	442	904	443	942	642	925	463
Worth-debt	142	116	179	128	150	137	122	134	129	170
Sales-rec.	804	582	664	445	535	461	569	524	561	449
Sales-mdse.	376	655	357	441	432	476	337	394	387	412
Sales-fixed	3,954	1,923	3,046	1,548	3,078	1,595	3,101	2,361	3,111	1,320
Sales-worth	372	492	310	344	340	348	329	293	336	261

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	108	27.00	119	29.75	107	26.75	95	23.75	87	21.75
Mdse.-rec.		159		147		118		133		136	
Worth-fixed	10	154	15.40	155	15.50	151	15.10	132	13.20	150	15.00
Worth-debt	25	119	29.75	129	32.25	109	27.25	91	22.75	76	19.00
Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

Specimen Analysis No. 10

The usual custom of deducting goodwill from the total assets and the net worth has been followed in this analysis. The common stock of the company is made up entirely of goodwill each standing at $462,500. In many instances goodwill has a real value. While the object of this analysis is not to determine the value of the goodwill, its present reasonableness will be commented on during the analysis.

In this instance different weights are suggested from those generally used. The fixed assets only run between 5.54 in the first year to 6.63 in the third, or $5.54 and $6.63 in every $100 of total footings, and, therefore, the weights of the ratios dealing with fixed assets have been cut down.

In any analysis a certain amount of common sense must be used. No definite figure is either good or bad unless related to some other figure, and no index number can be considered good or bad unless properly interpreted.

CURRENT RATIO

This company is engaged in a purely trading business, requiring no plant or machinery. The goodness, then, of its current assets is of prime importance. In connection with this it would be reasonable to tabulate separately the current ratios of the company and those selected as reasonable for the industry, together with the relationship between them.

Year	Co. ratios	Selected ratios	Relation Co. to selected ratio
First	229	211	108
Second	260	211	119
Third	233	218	107
Fourth	209	219	95
Fifth	215	248	87

From the above table it will be noted that in the last two years when the number of companies making up the group

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Inventory	58.31	38.70	55.74	40.92	47.18	38.41	53.75	43.90	48.95	38.89
Listed securities		.28		.25		.11		.23		.07
Misc.		.53		.38		.23		.81		.47
Total current	94.46	87.90	93.47	87.00	93.37	83.77	94.16	88.67	93.91	84.98
Total fixed	5.54	12.10	6.53	13.00	6.63	16.23	5.84	11.33	6.09	15.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
Taxes	3.11	.62	1.71	.38	1.56	.36	.13	.80		.68
Misc.		2.40		2.24	3.26	2.01		2.03		2.39
Total current	41.21	42.97	35.88	40.77	40.04	35.94	45.00	40.25	43.66	30.08
Funded debt		1.46		2.03		3.09		.78		3.83
Total debt	41.21	44.43	35.88	42.80	40.04	39.03	45.00	41.03	43.66	33.91
Reserves		1.99		.58		.59		.94		.67
Net worth	58.79	53.58	64.12	56.62	59.96	60.38	55.00	58.03	56.34	65.42
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Mdse.-rec.	214	88	186	98	124	102	169	113	145	93
Worth-fixed	1,061	488	982	442	904	443	942	642	925	463
Worth-debt	142	116	179	128	150	137	122	134	129	170
Sales-rec.	804	582	664	445	535	461	569	524	561	449
Sales-mdse.	376	655	357	441	432	476	337	394	387	412
Sales-fixed	3,954	1,923	3,046	1,548	3,078	1,595	3,101	2,361	3,111	1,320
Sales-worth	372	492	310	344	340	348	329	293	336	261

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	108	27.00	119	29.75	107	26.75	95	23.75	87	21.75
Mdse.-rec.		159		147		118		133		136	
Worth-fixed	10	154	15.40	155	15.50	151	15.10	132	13.20	150	15.00
Worth-debt	25	119	29.75	129	32.25	109	27.25	91	22.75	76	19.00
Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

figures was largest, and consequently a far better background, this company is shown at an increasing disadvantage. This current ratio is not alarming in any sense of the word, but the subject is not bettering its condition.

THE ACID TEST

Supplementary to the current ratio is the acid test—the relationship of the cash and receivables to the total current debt taken from the 100-per-cent statements.

	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
Rec.	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Total	36.15	48.39	37.73	45.45	46.19	45.02	40.41	43.73	44.96	45.55
Current debt	41.21	42.97	35.88	40.77	40.04	35.94	45.00	40.25	43.66	30.08
Ratio	87	112	105	111	115	125	89	108	103	151

The last year shows the company to be at its worst when compared with the group. Throughout the period the company's position as measured by the acid test is less liquid than the group. This is true, even though the investment in fixed assets for the company is only 40 per cent of the group in the last year. The larger percentage of inventory makes up the difference.

WORTH-DEBT RATIO

There is also a steady decline in this ratio and its relationship to the industry, as indicated in the following tabulation:

Year	Co. ratio	Selected ratio	Relation Co. to selected ratio
First	142	116	119
Second	179	128	129
Third	150	137	109
Fourth	122	134	91
Fifth	129	170	76

There is too great a reliance on borrowed capital in order to operate. In the last year owners are only supplying $129 for every $100 supplied by creditors, as compared with

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Inventory	58.31	38.70	55.74	40.92	47.18	38.41	53.75	43.90	48.95	38.89
Listed securities		.28		.25		.11		.23		.07
Misc.		.53		.38		.23		.81		.47
Total current	94.46	87.90	93.47	87.00	93.37	83.77	94.16	88.67	93.91	84.98
Total fixed	5.54	12.10	6.53	13.00	6.63	16.23	5.84	11.33	6.09	15.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
Taxes	3.11	.62	1.71	.38	1.56	.36	.13	.80		.68
Misc.		2.40		2.24	3.26	2.01		2.03		2.39
Total current	41.21	42.97	35.88	40.77	40.04	35.94	45.00	40.25	43.66	30.08
Funded debt		1.46		2.03		3.09		.78		3.83
Total debt	41.21	44.43	35.88	42.80	40.04	39.03	45.00	41.03	43.66	33.91
Reserves		1.99		.58		.59		.94		.67
Net worth	58.79	53.58	64.12	56.62	59.96	60.38	55.00	58.03	56.34	65.42
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	219.09	237.11	198.93	182.77	204.06	187.21	181.11	195.12	189.50	180.88

Ratios

Current	229	211	260	211	233	218	209	219	215	248
Mdse.-rec.	214	88	186	98	124	102	169	113	145	93
Worth-fixed	1,061	488	982	442	904	443	942	642	925	463
Worth-debt	142	116	179	128	150	137	122	134	129	170
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Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

a typical trade condition of $170. Inasmuch as these creditors are all current creditors made up of banks, paper houses, and trade creditors, it behooves them to watch the condition of this company and not allow a further decline. This ratio must in this instance be studied in conjunction with the current ratio, which, while above 200 per cent, is still only 87 per cent as strong as the group figure.

SALES-MERCHANDISE RATIO

Another feature to the disadvantage of the company is that this ratio, measuring the turnover of merchandise, has at no time been equal to the selected figure. These ratios and relationships run as follows:

Year	Co. ratio	Selected ratio	Relation Co. to selected ratio
First	376	655	57
Second	357	441	81
Third	432	476	91
Fourth	337	394	85
Fifth	387	412	94

The company's turnover of merchandise has improved, but each year detailed figures and subsidiary information accompanying the balance sheet mentions future commitments for merchandise in a very sizable amount. On the last statement it amounted to about one-half of the total merchandise on hand. This must be taken into consideration in an analysis. While it is appreciated that it is not customary to show commitments on the balance sheet, but usually as subsidiary information, it nevertheless is a liability and should not be lost sight of in measuring inventory turnover and the tying up of capital in inventory.

If $220,000 is added to the merchandise account, there is an inventory of $661,577, current assets of $1,067,180, and current liabilities of $613,797. This would lower the current ratio to 174 and the worth debt to 83, and the sales

100 Per Cent Statements

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	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
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Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Inventory	58.31	38.70	55.74	40.92	47.18	38.41	53.75	43.90	48.95	38.89
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
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Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
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to merchandise ratio to about 256 per cent, not nearly as pretty a picture as when these commitments are ignored. This is an additional computation which can be made occasionally to advantage when the subsidiary information is available. The extent of the liability on commitments depends both on the buyer and on the seller, and the contract existing between them. During 1920 a great many refused to live up to their commitments, but failure to do so is not regarded as good practice, assuming, of course, that the seller has or is willing to live up to his end of the contract. This line of business requires the holding of a rather large inventory, especially in some localities not so accessible to markets from which they purchase their merchandise. The danger of speculation is, however, prevalent, and is suggested in this company. The company has maintained a higher amount of merchandise than the type 100-per-cent statement throughout the period. As the profit-and-loss figures are supplied in this instance, it may be that the losses suffered are due in no small part to poor speculation or at least poor buying of merchandise.

PROFIT AND LOSS

During the five years under analysis the company shows red figures in the profit-and-loss account amounting to $128,957 and profits of $90,300, or a net loss for the five years of $38,657. During the same time a reduction in net worth takes place of $104,455. The company has maintained a fairly liberal dividend policy which from the previous remarks hardly seems justified.

The reduction in liabilities only amounts roughly to $36,000, so it is suggested again that possibly this firm is speculating in merchandise.

The poor showing in the profit figures hardly seems to justify a goodwill item of $462,500, or approximately 50 per cent of the footings used in computing the 100 per cent

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
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Funded debt		1.46		2.03		3.09		.78		3.83
Total debt	41.21	44.43	35.88	42.80	40.04	39.03	45.00	41.03	43.66	33.91
Reserves		1.99		.58		.59		.94		.67
Net worth	58.79	53.58	64.12	56.62	59.96	60.38	55.00	58.03	56.34	65.42
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Worth-fixed	10	154	15.40	155	15.50	151	15.10	132	13.20	150	15.00
Worth-debt	25	119	29.75	129	32.25	109	27.25	91	22.75	76	19.00
Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

statement. It is difficult to see how it is worth anything; and as a common stockholder one would hardly feel secure.

OTHER RATIOS

Collections as measured by the sales-receivables ratio are sufficiently rapid and are above the group figures for the entire period. The sales volume seems abundantly high as measured by the 100-per-cent sales figure.

As previously stated, the fixed asset investment is rather low, so weights were used which took this into consideration. Both the worth fixed and sales fixed are above the selected ratios for the period.

The last two years the company has turned over its net worth more rapidly than the group. This is a good point, everything being equal, but a glance at the 100-per-cent statements indicates quite clearly the reason, so the relationship of the company to the group must be more carefully investigated. The sales in the last year are slightly higher than the group, while the net worth is substantially lower. The reason, therefore, for the higher ratio is a much lower worth, which with approximately the same sales volume naturally makes a higher ratio.

The company's condition is set forth in the following index number, which with the above comments seems somewhat high due to its high ratios involving fixed assets:

Year	Index
First	111.25
Second	121.55
Third	112.20
Fourth	100.40
Fifth	101.85

In view of the shrinkage in the net-worth account for the five years, and the dividend payments in face of this shrinkage, an additional computation is submitted which assumes that the dividends paid in the last year have been left in the

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	8.91	6.23	7.79	5.37	8.04	5.10	8.59	5.70	11.21	6.28
Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
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Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
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Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

business and used to pay off current obligations. Dividends for the last year amount to $41,625. This has been added to net worth and deducted from current obligations, with the following result:

Current assets	$847,180
Fixed assets	54,849
Total	$902,029
Current liabilities	352,172
Net worth	549,857
	$902,029

The ratios recomputed on this basis improve the proportions substantially as shown by the following tabulation.

	Leaving dividends in business	Paying out dividends
Current	241	215
Worth-fixed	1,002	925
Worth-debt	156	129
Sales-rec.	561	561
Sales-mdse.	387	387
Sales-fixed	3,111	3,111
Sales-worth	310	336

The improvement in the index number is tabulated below.

	Wt.	Co.	Group	Rel.	Value
Current	25	241	248	97	24.25
Worth-fixed	10	1,002	463	154	15.40
Worth-debt	25	156	170	92	23.00
Sales-rec.	15	561	449	120	18.00
Sales-mdse.	15	387	412	94	14.10
Sales-fixed	5	3,111	1,320	158	7.90
Sales-worth	5	310	261	116	5.80
	100				108.45

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year		Fifth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group	Co.	Group
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Receivables	27.24	42.16	29.94	40.08	38.15	39.92	31.82	38.03	33.75	39.27
Inventory	58.31	38.70	55.74	40.92	47.18	38.41	53.75	43.90	48.95	38.89
Listed securities		.28		.25		.11		.23		.07
Misc.		.53		.38		.23		.81		.47
Total current	94.46	87.90	93.47	87.00	93.37	83.77	94.16	88.67	93.91	84.98
Total fixed	5.54	12.10	6.53	13.00	6.63	16.23	5.84	11.33	6.09	15.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	38.10	39.95	34.17	38.15	35.22	33.57	44.87	37.42	43.66	27.01
Taxes	3.11	.62	1.71	.38	1.56	.36	.13	.80		.68
Misc.		2.40		2.24	3.26	2.01		2.03		2.39
Total current	41.21	42.97	35.88	40.77	40.04	35.94	45.00	40.25	43.66	30.08
Funded debt		1.46		2.03		3.09		.78		3.83
Total debt	41.21	44.43	35.88	42.80	40.04	39.03	45.00	41.03	43.66	33.91
Reserves		1.99		.58		.59		.94		.67
Net worth	58.79	53.58	64.12	56.62	59.96	60.38	55.00	58.03	56.34	65.42
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	219.09	237.11	198.93	182.77	204.06	187.21	181.11	195.12	189.50	180.88

Ratios

Current	229	211	260	211	233	218	209	219	215	248
Mdse.-rec.	214	88	186	98	124	102	169	113	145	93
Worth-fixed	1,061	488	982	442	904	443	942	642	925	463
Worth-debt	142	116	179	128	150	137	122	134	129	170
Sales-rec.	804	582	664	445	535	461	569	524	561	449
Sales-mdse.	376	655	357	441	432	476	337	394	387	412
Sales-fixed	3,954	1,923	3,046	1,548	3,078	1,595	3,101	2,361	3,111	1,320
Sales-worth	372	492	310	344	340	348	329	293	336	261

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	108	27.00	119	29.75	107	26.75	95	23.75	87	21.75
Mdse.-rec.		159		147		118		133		136	
Worth-fixed	10	154	15.40	155	15.50	151	15.10	132	13.20	150	15.00
Worth-debt	25	119	29.75	129	32.25	109	27.25	91	22.75	76	19.00
Sales-rec.	15	128	19.20	133	19.95	114	17.10	108	16.20	120	18.00
Sales-mdse.	15	57	8.55	81	12.15	91	13.65	85	12.75	94	14.10
Sales-fixed	5	151	7.55	149	7.45	149	7.45	124	6.20	158	7.90
Sales-worth	5	76	3.80	90	4.50	98	4.90	111	5.55	122	6.10
Index	100		111.25		121.55		112.20		100.40		101.85

This improvement would have been the case if the company had refrained from dividends for only the last year. Both the current ratio and the worth-debt ratio would have approached parity to the group figures on this basis. If dividends had been withheld for the whole period an adjustment by reducing debts in an amount of $138,750 could have been made. On this basis the current ratio would have been 332 per cent and the worth-debt ratio 253 per cent. The position of the company hardly demands such a drastic revision, but this is an excellent example of the credit deterioration brought about by the payment of unearned dividends.

SUMMARY

A brief summary of this company indicates the following points to be watched.

1. Guard against overinventoried condition.
2. Watch declining current and worth-debt ratios.
3. Watch expenses and stop liberal dividend payments in order to bolster up surplus account.
4. Remedy situation whether through price changes, buying, inventory valuation, curbing expenses, suspension of dividends, or whatever means necessary to change a deficit from operations of $38,657 for five years to a profit, and change a reduction in surplus of about 105,000 over the same period to a gain.

Specimen Analysis No. 11

Data Submitted by Company

Date	First year	Second year	Third year	Fourth year
Cash	985,199	568,912	388,130	432,271
Rec.	2,513,928	2,534,870	2,548,190	2,467,604
Inventory	4,048,725	4,124,390	4,390,087	4,521,363
Listed securities	611,240	386,428	344,544	348,170
Misc.				
Total current	8,159,092	7,614,600	7,670,951	7,769,408
Plant and equipment	8,457,608	8,204,787	8,137,077	8,397,964
Misc.	2,209,566	2,432,491	2,163,242	1,660,079
Total fixed	10,667,174	10,637,278	10,300,319	10,058,043
Total	18,826,266	18,251,878	17,971,270	17,827,451
Payables	3,023,677	2,198,170	2,070,520	1,993,893
Taxes				
Misc.	85,951	85,544	70,300	
Total current	3,109,628	2,283,714	2,140,820	1,993,893
Funded	5,333,809	5,274,239	5,160,279	5,137,487
Total debt	8,443,437	7,557,953	7,301,099	7,131,380
Reserves	55,500	55,500	55,500	37,000
Minority stckhldrs' equity	19,610	22,348	15,059	57,868
Capital stock	8,613,452	8,588,218	8,564,205	8,564,205
Surplus	1,694,267	2,027,859	2,035,407	2,036,998
Net worth	10,327,329	10,638,425	10,614,671	10,659,071
Total	18,826,266	18,251,878	17,971,270	17,827,451
Sales	29,600,000	29,600,000	33,300,000	33,300,000

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	4.74	3.12	3.52	2.16	3.22	2.42	3.69
Receivables	13.35	19.59	13.88	16.46	14.18	17.21	13.84	15.86
Inventory	21.51	22.99	22.60	26.92	24.42	26.92	25.36	27.01
Listed securities	3.25	1.46	2.12	.80	1.92		1.96	.64
Misc.		.23		.22		.04		1.23
Total current	43.34	49.01	41.72	47.92	42.68	47.39	43.58	48.43
Total fixed	56.66	50.99	58.28	52.08	57.32	52.61	56.42	51.57
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	16.06	15.21	12.04	11.63	11.52	10.29	11.18	11.73
Taxes		.07		.12		1.97		.63
Misc.	.46	.22	.47	1.61	.39	.18		.22
Total current	16.52	15.50	12.51	13.36	11.91	12.44	11.18	12.58
Funded debt	28.33	27.49	28.90	25.91	28.71	26.38	28.82	22.87
Total debt	44.85	42.99	41.41	39.27	40.62	38.82	40.00	35.45
Reserves	.29	1.76	.30	1.56	.31	1.69	.21	
Net worth	54.86	55.25	58.29	59.17	59.07	59.49	59.79	64.55
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	157.23	210.71	162.17	202.98	185.93	231.74	186.79	275.09

Ratios

Current	262	274	333	321	358	265	389	300
Mdse.-rec.	161	139	162	140	172	125	183	
Worth-fixed	97	128	100	124	103	125	106	130
Worth-debt	122	145	141	194	145	165	149	185
Sales-rec.	1,178	2,141	1,168	1,538	1,311	1,590	1,349	2,000
Sales-mdse.	731	1,119	717	1,246	761	1,270	736	1,200
Sales-fixed	277	508	278	529	323	575	331	690
Sales-worth	286	452	278	353	313	400	312	540

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	95	23.75	104	26.00	126	31.50	123	30.75
Mdse.-rec.		114		114		128			
Worth-fixed	15	76	11.40	80	12.00	82	12.50	81	12.15
Worth-debt	25	84	21.	72	18.	88	22.	80	20.
Sales-rec.	10	55	5.50	76	7.60	82	8.20	67	6.70
Sales-mdse.	10	65	6.50	57	5.70	59	5.90	61	6.10
Sales-fixed	10	54	5.40	52	5.20	56	5.60	48	4.80
Sales-worth	5	63	3.15	79	3.95	78	3.90	57	2.85
Index	100		76.70		78.45		89.40		83.35

Specimen Analysis No. 11

In the analysis of this company the writers have purposely omitted a great many of the tables and ratio comparisons found in a number of the analyses, as it is considered that sufficient detail has been given so that the reader can now form opinions directly from the figures. Executives, higher in authority than the analyst, do not care to read over a mass of figures, but prefer the "cold facts" or the "meat" of the analysis in as brief form as possible.

This is a four-year exhibit of the statements of one of the largest companies in the field in which it operates. Its product requires rapid handling, merchandising, followed by rapid collection. This results in a high current ratio which will be noted is much higher than the historic 2 for 1.

COMMENTS

The current ratio of this company is satisfactory for the entire period, being substantially above the group the last two years even though the percentage of the total assets invested in current is smaller than the group.

CURRENT RATIO AND DEBT POSITION

While, in this analysis, the writers are attempting to eliminate tables, there is one special comparison as between two ratios that is impressive when tabulated.

RELATION OF COMPANY'S RATIO TO GROUP RATIO

Year	Current	Worth-Debt
First	95%	84%
Second	104	72
Third	126	88
Fourth	123	80

While after the first year the current ratio is above parity

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	4.74	3.12	3.52	2.16	3.22	2.42	3.69
Receivables	13.35	19.59	13.88	16.46	14.18	17.21	13.84	15.86
Inventory	21.51	22.99	22.60	26.92	24.42	26.92	25.36	27.01
Listed securities	3.25	1.46	2.12	.80	1.92		1.96	.64
Misc.		.23		.22		.04		1.23
Total current	43.34	49.01	41.72	47.92	42.68	47.39	43.58	48.43
Total fixed	56.66	50.99	58.28	52.08	57.32	52.61	56.42	51.57
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	16.06	15.21	12.04	11.63	11.52	10.29	11.18	11.73
Taxes		.07		.12		1.97		.63
Misc.	.46	.22	.47	1.61	.39	.18		.22
Total current	16.52	15.50	12.51	13.36	11.91	12.44	11.18	12.58
Funded debt	28.33	27.49	28.90	25.91	28.71	26.38	28.82	22.87
Total debt	44.85	42.99	41.41	39.27	40.62	38.82	40.00	35.45
Reserves	.29	1.76	.30	1.56	.31	1.69	.21	
Net worth	54.86	55.25	58.29	59.17	59.07	59.49	59.79	64.55
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sales	157.23	210.71	162.17	202.98	185.93	231.74	186.79	275.09

Ratios

Current	262	274	333	321	358	265	389	300
Mdse.-rec.	161	139	162	140	172	125	183	
Worth-fixed	97	128	100	124	103	125	106	130
Worth-debt	122	145	141	194	145	165	149	185
Sales-rec.	1,178	2,141	1,168	1,538	1,311	1,590	1,349	2,000
Sales-mdse.	731	1,119	717	1,246	761	1,270	736	1,200
Sales-fixed	277	508	278	529	323	575	331	690
Sales-worth	286	452	278	353	313	400	312	540

Index

	Wt.	Rel.	Value	Rel.	Value	Rel.	Value	Rel.	Value
Current	25	95	23.75	104	26.00	126	31.50	123	30.75
Mdse.-rec.		114		114		128			
Worth-fixed	15	76	11.40	80	12.00	82	12.50	81	12.15
Worth-debt	25	84	21.	72	18.	88	22.	80	20.
Sales-rec.	10	55	5.50	76	7.60	82	8.20	67	6.70
Sales-mdse.	10	65	6.50	57	5.70	59	5.90	61	6.10
Sales-fixed	10	54	5.40	52	5.20	56	5.60	48	4.80
Sales-worth	5	63	3.15	79	3.95	78	3.90	57	2.85
Index	100		76.70		78.45		89.40		83.35

to the group, this seeming strength is offset by weakness in the debt position. The company's total debt is above the average. This would indicate that the higher current ratio has been obtained by funding operations rather than by a fundamental condition of liquidity.

On the 100-per-cent statement the funded debt appears as 28.82 per cent as against 22.87 per cent for the group. The debt item is greater for the company by 5.95 points, or 26 per cent. The total debt registers 40 per cent for the company as against 35.45 per cent for the group. The company's whole debt is 4.55 points, or 13 per cent, greater proportionally than the group.

From this series of facts it seems quite evident that the company has been content to rely on its general standing to secure "capital at use" by borrowing rather than by stockholder subscription, to a great extent concealing this reliance by funding operations which have held up the apparent current position.

In doing this the management has so heavily pledged its fixed assets as to leave little residuary strength in them for general creditors. In a large measure emergency relief through funding is precluded in any future time.

The management has built up fixed capital charges by bond interest that may have a decidedly disastrous effect on dividends, especially in any period of general price level decline.

WORTH-FIXED

The fixed assets are greater per $100 of total footings than the group. This is disclosed in the worth-fixed ratio. There is practically no margin between the amount put up by the stockholders and the capital invested in plant. The owners are, therefore, supplying very little of the working capital.

In connection with this large plant item, it is noted that

100 Per Cent Statements

Date	First year		Second year		Third year		Fourth year	
	Co.	Group	Co.	Group	Co.	Group	Co.	Group
Cash	5.23	4.74	3.12	3.52	2.16	3.22	2.42	3.69
Receivables	13.35	19.59	13.88	16.46	14.18	17.21	13.84	15.86
Inventory	21.51	22.99	22.60	26.92	24.42	26.92	25.36	27.01
Listed securities	3.25	1.46	2.12	.80	1.92		1.96	.64
Misc.		.23		.22		.04		1.23
Total current	43.34	49.01	41.72	47.92	42.68	47.39	43.58	48.43
Total fixed	56.66	50.99	58.28	52.08	57.32	52.61	56.42	51.57
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Payables	16.06	15.21	12.04	11.63	11.52	10.29	11.18	11.73
Taxes		.07		.12		1.97		.63
Misc.	.46	.22	.47	1.61	.39	.18		.22
Total current	16.52	15.50	12.51	13.36	11.91	12.44	11.18	12.58
Funded debt	28.33	27.49	28.90	25.91	28.71	26.38	28.82	22.87
Total debt	44.85	42.99	41.41	39.27	40.62	38.82	40.00	35.45
Reserves	.29	1.76	.30	1.56	.31	1.69	.21	
Net worth	54.86	55.25	58.29	59.17	59.07	59.49	59.79	64.55
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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Sales-mdse.	731	1,119	717	1,246	761	1,270	736	1,200
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Mdse.-rec.		114		114		128			
Worth-fixed	15	76	11.40	80	12.00	82	12.50	81	12.15
Worth-debt	25	84	21.	72	18.	88	22.	80	20.
Sales-rec.	10	55	5.50	76	7.60	82	8.20	67	6.70
Sales-mdse.	10	65	6.50	57	5.70	59	5.90	61	6.10
Sales-fixed	10	54	5.40	52	5.20	56	5.60	48	4.80
Sales-worth	5	63	3.15	79	3.95	78	3.90	57	2.85
Index	100		76.70		78.45		89.40		83.35

the bonded debt is about 50 per cent of the total fixed assets, which includes plant, equipment, stocks, and bonds of subsidiary companies and other noncurrent assets. This compares with only 44 per cent for the group. This large bonded debt requires heavy fixed interest charges which eat into profits very materially. Such a heavy investment in fixed assets is justified only if productive of sales commensurate with the investment.

The sales percentage on the 100-per-cent statement is much below the group and the ratio of sales to fixed assets less than half of the selected figure. The conclusion is that the company is overinvested in plant, and it is suggested that there is a strong probability that some of the subsidiary plants taken over by the parent organization are unproductive of satisfactory results and are holding back the profitable operation of some of the other subsidiaries.

This lack of sales volume is further reflected in lower sales receivables and merchandise ratios, while the 100-per-cent statement shows less per $100 of total footings than the group, the ratios measuring the turnover of receivables and merchandise are much lower for the entire period. The sales program should be stimulated to a considerable extent.

SUMMARY

The index number of 83.35 per cent of parity reflects the condition of the company much better than does the current ratio. This company cannot be called a good risk, due primarily to its overinvestment in plant without a compensating sales volume. The heavy plant and noncurrent investment calls for a careful examination of the value of these accounts both as to their liquidating value and as a profitable operating cog in the big machine.

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