

CAPACITY TO PAY CURRENT
DEBTS.

BY

Arthur H. Winakor.

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BUREAU OF BUSINESS RESEARCH
COLLEGE OF COMMERCE AND BUSINESS
ADMINISTRATION

CAPACITY TO PAY
CURRENT DEBTS

BY

ARTHUR H. WINAKOR



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It is the purpose of the Bureau of Business Research of the University of Illinois—

- (1) to study and as far as possible to explain economic and industrial conditions within the State;
- (2) to direct attention to experience-tested practices of good business management; and,
- (3) to investigate methods for securing the best executive control of business.

BUREAU OF BUSINESS RESEARCH

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PREFACE

In some respects the data used and views expressed in this study are related to those presented in a previous bulletin of the Bureau, *Maintenance of Working Capital of Industrial Corporations by Conversion of Fixed Assets*, published as No. 49. A reading of this prior study will prove helpful to a full understanding of the present investigation.

The purpose of this study is to consider some of the usual methods of measuring current debt-paying capacity. In addition, certain other factors, seldom if at all adequately recognized and treated, will be brought into the picture. These pertain largely to the ability of enterprises to make outlays of funds for properties in advance of their complete utilization and to their ability to delay outlays at other times while diverting such funds to debt payment or other purposes.

Attention is also given to the size of business units as having a bearing upon the problems of working capital, debt-paying power, depreciation and depletion, and the like.

Considerable emphasis has been given to the phrase "capacity to pay." This is used in the sense of embracing not only ability to pay, as ordinarily expressed, but also the possession of resources of a potential nature, as well as those already developed and employed. In a sense the study deals with paying power, both developed and latent.

Although the data have been heavily influenced by depression conditions, the facts and principles are entirely applicable to normal conditions of operation. In fact, the study is much more concerned with capacity to pay current debts in the normal course of business than under cyclical fluctuations, or the like.

Acknowledgment is made of the valuable assistance rendered by the various members of the Bureau staff. Not only was help given in the detailed assembling and preparation of the data, but suggestions were also made in regard to the manuscript and the topics discussed.

ARTHUR H. WINAKOR

June, 1936

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I. WORKING CAPITAL ANTECEDENTS

It is a rather common impression that large companies are better credit risks than small companies, and there is considerable evidence to support this opinion.¹ A number of studies have been made in recent years in which such statements may be found. Many of these statements and studies, however, are based on an inadequate survey of all the elements which must be considered in a reasonable appraisal of debt-paying capacity.

The purpose of this investigation is to study a few factors which enter into the measurement of capacity to pay debts. It would be impossible to survey all the aspects of this problem which might present themselves. However, a few considerations will be outlined which are thought to have been inadequately treated heretofore. Although emphasis is placed upon the effect of size of enterprise, similar variations are believed to exist among enterprises of different kinds, among those performing different operations in the same industry, and even among those of different size performing similar operations in the same industry.

Appraisal of the capacity of an enterprise to pay debts should commence with a survey of the general factors. Included therein are the economic background, or situation, at the time a debt is created, and the probable economic condition during the existence of the debt up to maturity and payment. The nature and size of the enterprise and the prospects for the industry of which it is a member must also be considered. And, in addition, such specific factors as the history of the company, its reputation and past performance, and the ability, sagacity, and character of its management should be evaluated before a decision can be approached regarding its probable ability and capacity to meet obligations.

Factors such as those just enumerated would provide the general setting for a detailed investigation of the operations and policies of an enterprise. There is no intention in this study, however, of entering into a discussion of these preliminary considerations, or of many similar and related problems. Instead, attention will be focused upon

¹Gardiner C. Means, "The Debts of Industrial Corporations," Chapter VI of *The Internal Debts of the United States*, edited by Evans Clark (The Macmillan Company, New York, 1933).

W. L. Crum, *The Effect of Size on Corporate Earnings and Condition*, Business Research Studies No. 8, Bureau of Business Research, Harvard University, Soldiers Field, Boston, Mass.

a few of the interpretations which may be drawn from financial statements and internal operating data.

Before discussing the procedure and the steps involved, or the meaning of these, a few preliminary considerations may be helpful.

For example, in recent years considerable attention has been given to economies in the use of capital, especially of sums tied up in inventories. Closer coordination of raw materials purchases, production schedules, and sales volume has resulted in material reductions in the sums currently required for such operations. Similar but less commonly recognized changes have also taken place in sums required to finance customers' accounts. The use of trade acceptances and sight drafts, changes in terms of sale and discounts, more persistent collections, and the like, have likewise contributed to substantial savings of capital.

Equally important, but less fully recognized, are changes which have taken place in the use of cash and credit facilities and have thereby reduced the need for cash or increased its efficiency. Among these may be mentioned closer coordination of the banks through the Federal Reserve System; quicker clearance of checks and reduction of float; rapid transportation, facilitating even more rapid operation of credit instruments; telegraphic transfer of funds; and especially the air mail as a more recent step in this direction.

The effect of these and other similar changes has been to increase the effectiveness of cash balances and to permit a much greater volume of business to be conducted with a given sum invested in cash. Naturally these improvements in the speed of business operation and the better coordination and control over the utilization of all assets have been reflected either directly or indirectly in measures of current position. They have meant a reduction in the amount of active current assets for each unit of business transacted; in other words, fewer current-asset dollars are required to finance a given transaction.

At the same time current liabilities have also been reduced. More frequent as well as more rapid payment has reduced current liabilities at least as fast as current assets. The natural effect of such a change is to produce a materially higher current ratio, a substantially unchanged or perhaps somewhat reduced amount of working capital, a much more rapid circulation of capital in current assets, and a more liquid condition in current assets as well as in current liabilities.

The business enterprise may be likened to the automobile. The faster rate of travel has made necessary larger springs, shock absorbers, and other parts capable of smoothing out the bumps and jolts that

are found from time to time on the road. So, too, the more rapid circulation of current funds of the modern business enterprise requires certain shock absorbers that are capable of carrying the enterprise over unexpectedly bumpy roads. The bumps may be in collections, debt maturity, operations, seasonal variations, uncertainty of earnings, and the like. The absorbers may take the form of bank credit, marketable securities, or unusual and careful planning in financial management.

The significance of trends such as these lies not so much in their past import, as in their usefulness as an aid to the interpretation of present values. Furthermore, they are indicative of the future—of future changes and of the unreliability of present standards.

Another example of the developments in recent years is the increasing emphasis placed on the accumulation of marketable securities and large cash balances. This trend towards accumulation of "cash" assets has been particularly marked among large enterprises.² These "extra" cash balances or portfolios of marketable securities represent a composite of funds from several sources and available for different purposes. In part they represent accumulation of funds retained from past profits in excess of current needs, investment in properties, sums distributed as dividends, and the like. In other cases they consist of liquid resources that have been realized through the reduction and liquidation of inventories, notes, and accounts receivable. Through reductions in the total of these current assets, due to smaller volume of business as well as to more economical employment of funds, parts of these assets have been released to other services. Again, a somewhat analogous situation has been created in the case of fixed properties, such as buildings, machinery and equipment. Although large sums of liquid assets have been retained by industry from income to take care of wear and tear—i.e., depreciation of properties—many companies have refrained from expending these funds for replacements, betterments, or additions during the times of economic uncertainty. Consequently, in many instances the large amounts of cash and marketable securities owned by business enterprises are funds held only temporarily while awaiting an opportune time for investment in other forms.

Naturally, these conditions influence the true debt-paying capacity of an enterprise. Although these funds, from whatever source derived, are available for debt payment for the time being if thus needed, in

²See Bulletin No. 49, *Maintenance of Working Capital of Industrial Corporations*.

reality they are only temporarily so, and when normal conditions arrive, they will in part disappear or become unavailable. As a result, the true picture of the capacity of an enterprise to pay debt must include the probable disposition of such funds during the existence of a particular debt. Diversion of these cash reserves to debt payment may in some cases occasion later borrowing to replace needed but worn-out assets.

These changes in the distribution and utilization of funds naturally influence and may distort the usual analysis of current position and working capital. The result may be a distinct overstatement of the correct showing, since the current condition is thus portrayed as being more favorable than it actually is when viewed from all angles.

A sounder current situation may be imputed to a concern from certain portions of these cash resources. The portions of these funds not definitely committed to specific future use, such as property replacement, cyclical inventory-expansion, and the like, may be indications of sounder financial condition than otherwise would be possible, both in the present and near future. One might go somewhat further and say that even though the funds are definitely allocated to certain purposes that require them to be accumulated and retained for future use, they may nevertheless contribute materially to strengthening current position in the interim. They can, if necessary, be employed temporarily for meeting maturing obligations. Thus debts maturing in the period when these funds are not required for their final purpose, are likely to be repaid because funds thus temporarily free can be diverted if necessary.

Certain funds are often employed in operations only seasonally. That is, they are called into use only during periods of peak operations to provide for such payments as arise in connection with larger than usual materials purchases, wage, and other expense payments incurred in the seasonal expansion of activities, and to provide for enlarged accounts of customers incident to the expansion of sales at certain months of the year.

The concern which borrows for seasonal working capital will most likely have both a smaller amount of net working capital and a lower current ratio. It will have less working capital because it will not have a permanent fund for seasonal needs, but will borrow for this purpose. Such borrowing will further reduce the ratio of current assets to current liabilities during the time that the loan is outstanding. The reduction will be due to the increasing of both current assets and current liabilities by equal amounts, without a change in net working

capital. On the other hand, the current ratio and the working capital of the enterprise which provides internally for its own seasonal needs will remain substantially unchanged by seasonal expansion and contraction. No funds will be borrowed; instead, "idle" funds will be drawn into productive use.

It is well to note, however, that seasonal expansion places strain upon the self-contained enterprise as well as upon the seasonal borrower. The reserve is employed, thereby temporarily reducing or depleting it, and the margin of cash protection for debt payment diminishes, even though the current ratio and the working capital are unchanged. The liquidity of the current assets is likely to be reduced, since a larger proportion of them is tied up in inventories and receivables for the time being.

The mere presence of a reserve of cash or marketable securities, however, does not of itself presuppose or indicate superiority in current position, irrespective of the source and nature or the final disposition of such funds. There are too many other considerations entering into the determination of debt-paying capacity to allow any single factor to color the whole picture unduly. Nevertheless, in certain cases a strong presumption of favorable financial condition is likely to be made for the enterprise thus situated.

A number of important points bearing on the current position of a company are to be gleaned from certain policies and certain non-current investments. For example, one enterprise may rent its land and building, or even its machinery, whereas another may own these outright. In another case a company may manufacture only certain parts or units which it sells, buying and assembling the others. Now the question at hand is, what influence do these variations in methods of operation have upon the current position of an enterprise?

It is at once evident that an enterprise which rents its land and buildings will have to make a relatively fixed periodical payment for rent irrespective of its rate of operating activity and earning ability. This payment represents a recurrent drain upon working capital, which must be met in periods of either large or small earnings. If, instead of renting such fixed assets, the business invests in its own buildings and lands, the nature of the periodical expenses will be changed. Instead of payments for rent, the periodical charges will be for depreciation, taxes, insurance, and perhaps some interest, if the money to acquire these assets was borrowed. In addition there will be other irregular expenses for repairs and maintenance of the properties. In the long run, of course, there must also be remuneration for the capital invested, but this need not necessarily be a fixed charge.

These expenses do not all have the same characteristics as the rental expense. Depreciation is a current expense but not a current expense outlay, i.e., it does not require the expenditure of current funds each year to provide for it. Insurance may be a current expense outlay or not, depending on whether the company assumes its own risks. Repairs, maintenance, and related expenses are of an intermediate type. Although the expenses themselves are somewhat regular in their incidence and time of occurrence, the outlays which are made to provide for them and to maintain the properties are subject to considerable manipulation. Such expenditures may often be anticipated if the management so desires, or some of them may even be deferred for several years.³ The time when the actual outlay will be made to provide for such expenses, and even the amount, frequency, and duration are subject to considerable discretionary managerial variation.

If properties are owned instead of being rented there is seen to be a material variation in the regularity with which funds from working capital must be provided to pay for them. Irrespective of whether they are rented or owned, their productive utilization will normally result in accretion to working capital. These transfers to working capital will, under usual conditions, provide funds for the replacement of property consumed as depreciation, for expenses incurred in maintenance, for repairs, etc.⁴ Since the management has wide discretion as to the manner in which it may utilize these funds, a substantial sum of current capital may be acquired merely by refraining from making some of the usual expenditures and replacements.

In the second comparison suggested, one company produces its own parts, whereas another concern manufactures some and purchases others, thus doing more of an assembly business. There will be distinct differences in the relative amounts of working capital, fixed capital, and in the debt-paying ability of these two companies. In part, however, some of these differences may be reduced to a situation similar to that just illustrated.

The first concern owns more fixed productive properties than the other, and hence has considerable leeway in the disposition of revenues received in the form of depreciation funds, and flexibility by reason

³Arthur H. Winakor, "Incidence of Expenses in Accounting," *The Accounting Review*, Vol. IX; No. 4, December, 1934, pp. 312-318.

⁴It is possible, of course, that the properties may not be utilized in full or even at all, and thus fail to contribute, except to a limited extent, to revenue production and to working capital. For a discussion of such problems see Bulletin No. 49, particularly pp. 11-19.

of large sums of deferable expenses. The enterprise which purchases parts will not have this same leeway. The company producing all its parts may not have lower costs of production than the other, but its costs for a considerable period of time—even extending to five years in many cases—should require materially smaller cash outlays and consequent smaller burdens on working capital. In fact, working capital may even gain from a productive consumption of properties unaccompanied by a commensurate demand for current expenditures.

In addition to having less leeway in its expenditures, the enterprise purchasing its parts will also differ in other important respects from the company which produces all its parts. For example, its working capital will be larger in relation to fixed assets because of smaller amounts of the latter. There will be significant differences also in the velocity of circulation of capital; in the volume of sales; in the distribution, composition, and liquidity of the current assets, as well as of the current liabilities; and also differences in the relationships of current assets to current liabilities. Most, if not all, of these variations can be attributed to conditions inherent in the specific types of operations performed by the two enterprises.

Thus the enterprise purchasing parts for assembly and performing only certain operations itself will naturally have a greater proportion of its assets invested in current assets than the other. And since the former purchases more merchandise, its inventories are likely to be relatively larger than those of the company manufacturing all its parts. If its purchases of merchandise are larger, it is also quite natural that its current liabilities for trade-accounts payable will be correspondingly larger. Wages will constitute a more important liability in the manufacturing than in the non-manufacturing enterprise. In part, of course, the terms of wage payments, materials purchases, and the like, will govern the size of current liabilities.

In so far as turnover of total investment is concerned, the enterprise that has the larger fixed investment and performs most of the manufacturing steps will have the slower rate of turnover. It will have large fixed assets and substantial inventories of raw materials and goods in process. Its earnings will be dependent largely upon manufacturing profits, or the results of productive utilization of fixed capital. Since its earnings will be derived from both the manufacture and the sale of goods, its margin of profit is likely to be higher, but its volume of business may be relatively lower than that of the other enterprise. The same situation will result from a comparison of sales volumes with current assets. The smaller sales volume relative to the

larger and slower moving inventories of raw materials and goods in process will further result in a slower rate of circulation of capital. On the other hand, larger volume of sales, smaller margin of profit, rapid turnover of total assets, current assets, and all the other elements of financial structure will be characteristic of the company performing fewer manufacturing operations.

In comparing the liquidity of the current assets of the two types of enterprise, it will be found that the relative proportions of raw materials, goods in process, and finished inventories, and the nature of the terms granted to trade creditors will be the determining factors. Manufacturing enterprises will have relatively more of raw materials and of slower moving and less liquid current assets. Their accounts receivable are likely to be smaller and of shorter terms. As a rule, the company performing only part of the manufacturing steps will have current assets that are relatively both larger and more liquid, as well as a more rapid circulation of capital through these assets. But it must not be forgotten that the latter type of company will also have a larger sum of current liabilities outstanding and awaiting payment at any given time. And again, it will not have the leeway which is available to the enterprise with large fixed assets, deferrable expenses, and other outlays.

More significance may be attached to considerations like the foregoing than is suggested by the comparative variations in financial structure which have been discussed. Similar differences are also frequently found as between large and small enterprises in the same or similar industries. Although it is possible to find small concerns that undertake the same functions as the large, often they perform only parts of these. Thus the small firm is likely to purchase many finished or semi-finished parts, from which it can assemble finished products without too burdensome an investment in fixed manufacturing equipment. Then too, the small enterprise is less likely to own its own building and plants; it may rent these. Consequently it will have less leeway in the disposition of its funds because of smaller prepaid assets and fewer deferrable expenses. It is quite probable that it will have larger and more liquid current assets, greater sales volume, and more rapid circulation of capital through the current assets. On the other hand, it will have materially larger current obligations. Depending on the relative importance of these items one to the other, one may find elements of strength or weakness in the capacity of enterprises of different sizes or of different types to meet presently maturing obligations or future debts.

Another respect in which the nature of the operations of an enterprise materially influences the debt-paying capacity is the length of the manufacturing cycle of the processes it performs. The use of time units for a periodical casting-up of financial condition or measurement of past operating results bears little direct relation to manufacturing processes or life of properties and debts. In some lines of business the year serves very well as a period for business measurement, since the concern will experience a complete cycle of seasonal expansion and contraction in that time. In others, the complete cycle of production takes place in a period materially shorter than a year. In such cases the use of yearly data thus tends to give too liberal a view to what is "current" and what is not "current." Merchandise left over from one season to another might be counted as "current" in the one-year rule, although as a matter of fact such goods would be out of date. On the other hand, the one-year rule for establishing "currentness" works a hardship on those companies in which the productive processes are slow. If the cycle of production requires more than a year, the one-year rule may prove inadequate. For example, in processes requiring the ageing of products, such as tanning and curing of hides, and ageing of beer or tobacco, a strict compliance with the usual interpretation of what should be considered current would omit a large portion of goods in process and raw materials. It must be readily acknowledged, however, that such assets, even though they should be generally accepted as current, would nevertheless be of slow maturity. But this is, after all, a matter of degree. The relative amount of quickly realizable current assets varies from industry to industry.

The method of computing current assets, as well as the accuracy of the computation of current liabilities, is readily seen to be a significant determinant in the usual picture of debt-paying capacity as revealed by the ordinary processes of analysis. In fact, one may go much further, and say that all the underlying accounting principles and procedures which have been involved in the preparation of the account values, as well as the specific methods of valuation, classification of accounts, and related accounting-financial procedures, must be considered and reappraised before a reasonable evaluation of the debt-paying capacity of an enterprise may be obtained. Failure to appraise such facts critically may result in gross inaccuracies as to the true picture of debt-paying capacity.

II. ELEMENTS IN CURRENT-POSITION ANALYSIS

This section of the bulletin is devoted to a brief statement of the elements to be considered in the appraisal of current debt-paying power or capacity. The section which follows, Part III, is an illustration of these elements by use of quantitative data. Part II is thus a statement of factors essential to bring out the actual ability and latent capacity to pay current debts. Part III shows the operation of these forces.

As was pointed out in the preceding section, the analysis and interpretation of any aspect of financial condition must go far beyond the mere acceptance of the accounting values. Besides the broad economic changes which are always conditioning the present and future welfare of any company, policies and procedures adopted by the company itself must be considered. More specifically, attention must be given to methods of valuing inventories, bases for classifying good, poor, and bad accounts and notes receivable, and all other underlying judgments which are employed in attaining the net results presented in the various financial statements.

Once these have been ascertained, it is possible to state definitely whether the current position, or at least the component parts of it, has been reasonably stated, overstated, understated, clearly disclosed, or not fully disclosed. The book values reflected in accounting statements are only one of several factors which should be examined in the appraisal of paying power.

In general, the analysis of statements has been divided into the so-called static and dynamic elements. The first of these analyzes the accounting data at one or more moments of time. The dynamic measurements so combine the items as to show the rate of movement of some of them within a given period of time. Usually this rate of movement is in terms of annual or monthly sales volume. In addition, it is common to find relative numbers or index numbers used to compare changes in the magnitude of items, either actual amounts or ratios, from one period to another.

Among the static measures of ability to pay current debt are to be found analyses such as the composition of the current assets items and the current liabilities items. These take the form of scrutiny of the nature of each item and percentage comparisons of the items with one another, with total current assets, with total assets, etc. Such steps are intended to bring out the soundness of the amounts or the relative proportions of the items among themselves. Also, emphasis is given to "liquidity." It is quite common to speak of liquidity of

current assets, but rarely does one hear of liquidity of current liabilities. Yet it is just as important to know how soon the debts mature as a whole, what part matures in ten days, in a month, or in six months as it is to know the same sort of facts about current assets. In essence, a company can be said to have liquid current assets only in relation to the liquidity or rate of maturity of its current liabilities. Even though every dollar of current assets could be converted into cash within thirty days, a concern would not be liquid if its current liabilities matured within ten days and exceeded the current assets that could be liquidated or realized within the same period of time.

After one has studied liquidity, then the next stage should be the equating of current assets against current debts, by employing such ratios as the Current Ratio (Current Assets to Current Liabilities), the Acid Test, and others of a similar nature. Another useful method is to determine what would happen at intervals of a week or a month if assets should be realized and turned over to debt payment.

An added step in the method of static analysis is the examination of the net working capital. The amount of net working capital and the direction of its movement should be determined. It is essential to know how its composition and liquidity stand at a certain time and over a period of time. Measurements of working capital relative to total investment, fixed assets, current debt, total debt, and the like, are helpful in appraising the financial condition. It is also important to have a knowledge of the sources, uses, and purposes of the working capital, and of its component parts. Some of these points will be discussed later.

The second major step in the analysis of current position is by means of the so-called dynamic measures. These introduce the elements of volume and velocity in connection with the flow of funds through the current assets and to the current liabilities. These measures in turn may be further divided according to the characteristics which they disclose, and the bearing of these qualities upon the immediate and future power of a company to meet maturing obligations. The more commonly emphasized of these two classes of items are the so-called "turnover" ratios, or measures of velocity of circulation. They also measure the activity of funds invested in the various asset balances, as well as the relative size of current debts. Thus they indicate what is occurring from one period to another, and help to explain changes in the various asset and liability accounts, as well as to indicate the activity of these balances. Furthermore, they show the volume of business and volume of costs.

The second subdivision of these dynamic ratios is not much concerned with the rate of turnover and volume as a whole. The chief interest in using these later means of analysis lies in ascertaining what direction the flow of funds is taking, and weighing this in relation to the sources of funds and the obligations upon these funds. It is self-evident that a simple trading organization, which rents its fixed properties, will have the sale of merchandise as the main source of its revenues. And, conversely, its expenses will consist of the usual wages, rent, merchandise, freight, insurance, and the like. Most of these will be paid from day-to-day revenue-receipts. As long as sales continue at a normal plane, part of the funds thus currently obtained will be used for purchases of new materials and services of similar kinds. On the other hand, there is no great likelihood that certain assets will be "realized" and retained in cash. If inventories are reduced seasonally, funds may be employed for payment of bank loans or trade accounts, or perhaps turned into marketable securities.

A more complex situation is found in a company that employs large fixed assets or natural resources, which contribute in many cases a significant portion of the costs because of their importance, both in size and amount, in the production of revenues. In such cases there arises in its full sense the two-sided opportunity to make large outlays in advance and to delay the making of outlays in the present or near future. These opportunities to hold back funds or to invest funds as need and wisdom dictate are among the prime considerations in judging debt-paying capacity, whether for long- or short-time debts.

It is well known that funds from short-term loans or debts should be employed to acquire or finance self-liquidating or quickly realizable assets. It is also common to plan the payment of long-term debts from earnings or from proceeds attributable to the use of properties thus acquired. There is, however, no harm likely to arise from the temporary employment of funds attributable to long-term properties, such as plant, or ore reserves, for the payment of short-term debt. In fact, such payment may permit a company to remain solvent, thus protecting both short- and long-term creditors, when other treatment might be disastrous.

The question at once arises as to how such sources for debt payment may be ascertained. At this point, it is well to recall that accounting procedure tends to protect and maintain capital, irrespective of sources of losses or gains. Thus if a manufacturing loss of \$1,000,000 is incurred, and a trading gain of \$2,000,000 is made, the accounting procedure would result in showing a net gain of \$1,000,000, and part

of the gain from trading would be available for replacement of properties consumed or lost in manufacturing activities. These funds might be used thus or for other purposes. As long as funds are sufficient to replace all or some of the consumed fixed properties, it is possible to divert some of the funds to purposes, such as debt payment, other than the actual source from which they were derived.

The size and possible importance of such funds to a specific enterprise may readily be ascertained and measured. It is necessary to know the policy of the concern with respect to replacements, however, before any certainty is possible as to the disposition of the funds. It is one thing to have funds available, and another to allocate them for employment.

There are several factors to examine. Answers to questions such as the following are needed. What is the amount of depreciation and depletion of fixed properties? How much of this depreciation and depletion is attributable to productive consumption of the properties, and how much represents wasted capacity expense? To what extent have funds been provided by revenues or earnings as compensation for these expired properties? To what extent will they and must they be diverted to new outlays? Even more important are the changes that take place during the period in the future when a loan is outstanding. What will be the situation when the debt matures? Companies with large depreciation costs may and frequently do sustain operating losses, but do not necessarily suffer losses in excess of depreciation costs. Consequently, even though losses do occur, improvement in capacity to pay short-term debt may take place.

Quantitative measures help to evaluate the situation. What are the ratios of depreciation to working capital, of depreciation to current assets, and of depreciation to current debts? What will happen to these ratios if allowance is made for essential replacements? What will happen to them if both necessary replacements and losses of capital are deducted from the "depreciation fund"?

The ratio of depreciation to working capital is an approximation to the fixed assets expired and perhaps recovered as revenues, in comparison with the working capital. In other words, it shows how large such converted funds may loom relative to the working capital, and is a measure of the potential accretion to the working capital funds. Comparison of depreciation with current assets enables one to grasp the potential increase in current assets disregarding the element of debts. And conversely, comparison of depreciation with current debts indicates the size of this potentially available fund relative to the out-

standing current obligations. In other words, these ratios indicate whether these converted funds are significant in size or not, and whether they may contribute in a material way to current funds available for debt payment. By estimating what portions of such funds are actually earned or recovered in revenues, and what sums will be needed for replacements, etc., the probable extent of the balances available for current use may be ascertained.

Similar analyses should be made of depletion of natural resources or wasting assets. Other non-current assets which are consumed and need not be immediately replaced should also be appraised.

The aggregate of these funds which probably will be available for "free" working capital may easily be the deciding factor in determining whether an enterprise is a sound credit risk. If the properties have been well maintained in the past and are not old or obsolete, this condition may indicate a possible source of funds in time of need—the funds which ordinarily would be used for replacements. Such policies cannot be followed indefinitely, however; these funds may ordinarily be withheld and replacements neglected for only a few years without impairment of sound condition and operating ability in competitive industry. If such policies have already been put into effect, then the future may well be questioned for the "reserve" has been "mortgaged." If the enterprise has not followed such a plan, but is in a position to do so for a while if necessary, then debt repayment may be correspondingly assured by the additional capacity to pay.

This type of analysis may be rather definitely related to the problems of size of enterprise. Although not necessarily so, there is a fair relationship between size of enterprise and types of properties and operations. The larger companies, and particularly the integrated concerns, are likely to reach back to natural resources and basic heavy manufacturing processes. Their larger resources and greater volume of operations will make it economically possible to utilize highly specialized machines involving large outlays. It is among such operations and properties that greatest opportunity for the "prepayment" or "deferment" of outlays will be found. Thus such concerns will have larger prepaid properties and will face the problem of periodical replacements, as well as possible accumulation of funds in the meantime. Such properties are also likely to involve the need for current repair. These repairs also are subject to discretionary judgment, both as to their amount and time or regularity of incidence and as to the time of the outlays to provide for them.

III. QUANTITATIVE MEASUREMENT OF CAPACITY TO PAY CURRENT DEBTS

This section, as previously mentioned, presents a partial illustration by use of quantitative data of some of the significant factors outlined in the preceding part of the study. The data are taken, for the most part, from the statements of 172 identical industrial companies for the period of years 1927 to 1933. They are classified to show changes in the sample from year to year, and reclassified to show variations among different sizes of companies, as measured by total tangible assets.⁵ In addition, data from the *Statistics of Income* for all corporations that reported balance-sheet data to the Bureau of Internal Revenue in 1931 have been employed where the other sample did not provide certain operating-statement figures which it was desired to use.

The material presented here and the procedure followed are not to be looked upon as ideal models in the art of credit-granting or statement-analysis. In the first place, so broad a topic could not be encompassed adequately in the brief space available. In the second place, the data come from published statements, which admittedly fall far short of containing the full information ordinarily available to the borrower or to the grantor of credit. The purpose in presenting these data, even with their limitations, is to bring out a few principles and to sketch a procedure which have not been adequately emphasized heretofore in the analysis of financial statements.

Furthermore, there are other values inherent in the data and their presentation. They illustrate certain fundamental economic and financial changes in the resources and liabilities of a sample of large leading companies in American industry in recent years. They show a few of the dynamic movements of funds within these companies. They reflect the manner in which changes were imprinted on these companies by successive years of prosperity, depression, and recovery. All these facts are noted by observing changes from year to year from 1927 to 1933. Although the data were actually classified according to size of

⁵These are the same companies which were employed in Bulletin No. 49, *Maintenance of Working Capital of Industrial Corporations by Conversion of Fixed Assets*. There are some material variations in the data as used here and in the former study. Greater detail of account classification was required in this study than had been employed in the former. The availability of later data and statements made possible some changes in the earlier data. Furthermore, an inability to obtain complete and detailed data for some companies resulted in their omission from this study.

company, as measured by total tangible assets, for each year, such results are presented in summary form only.⁶

As previously mentioned, considerable question exists as to the comparative financial strength and profitableness of small and large enterprises. Although such comparisons are only relative—depending on time, type of company, industry, size, and the like—still some light may be shed on the problem. Questions have been raised in recent studies, to which satisfactory answers have not as yet been forthcoming. It is hoped here to offer some clues to these problems, all of which are directly related to the central theme of this study—namely, analysis of the capacity of corporations to pay their current debt.

Composition of the Current Assets

Although not given in detailed classes of accounts, the main elements of the current assets are shown in Table I. Since these items have been compared with total tangible assets, this item is also presented. In 1927 the tangible assets of the 172 industrial companies amounted to \$15,095,000,000. Current assets amounted to \$4,912,000,000, or 32.5 per cent of the total assets. Current assets increased more rapidly than total assets in 1928 and constituted 34.1 per cent of the total, but in 1929 current assets increased less rapidly and declined to 33.8 per cent. In 1930, 1931, and 1932 total assets declined progressively, as did likewise current assets. The latter declined more rapidly, however, and by 1932 current assets constituted only 26.1 per cent of total assets. Further declines in total assets and slight increases in current assets in 1933 indicated the reversal of the period of liquidation and the beginning of recovery.

More important than changes in current assets as a whole were the changes in individual components of this item. And, of course, the corresponding changes that occurred in current liabilities were also important; discussion of these, however, will be deferred to a later section.

Cash and marketable securities reached their peak amount in 1928, whereas the other important elements of current assets, as well as the total current assets, were at their highest in 1929. In 1928, cash and

⁶The division of the data by size of company for each year too greatly reduced the number of cases in certain groups and introduced vagaries into the results. Irregularities in the trends, due to the fact that certain companies unduly influenced the results, seemed to obscure the tendencies which stood out in the picture of changes as a whole. Consequently, variations for each size-group for each year are not shown. It may be well, however, to state that, as a whole, these detailed year-to-year trends conformed with the summary results presented.

TABLE I
COMPOSITION OF CURRENT ASSETS OF 172 INDUSTRIAL CORPORATIONS, 1927 TO 1933

Years	Total Tangible Assets	Total Current Assets*	Cash and Securities	Receivables	Inventories
	In thousands of dollars				
Total.....	\$109,868,502	\$33,578,554	\$10,463,052	\$6,506,537	\$15,869,539
1927.....	15,095,396	4,912,464	1,443,544	999,334	2,362,319
1928.....	16,128,546	5,496,937	1,752,597	1,134,605	2,487,678
1929.....	17,229,900	5,827,283	1,721,372	1,217,705	2,768,351
1930.....	17,080,254	5,270,896	1,633,494	1,037,919	2,491,706
1931.....	15,565,342	4,418,371	1,394,296	754,539	2,113,622
1932.....	14,633,093	3,821,198	1,282,520	677,959	1,787,936
1933.....	14,135,971	3,831,405	1,235,229	684,476	1,857,927
	Ratio of item named to total tangible assets				
Total.....	1.000	.306	.095	.059	.144
1927.....	1.000	.325	.096	.066	.156
1928.....	1.000	.341	.109	.070	.154
1929.....	1.000	.338	.100	.071	.161
1930.....	1.000	.309	.096	.061	.146
1931.....	1.000	.284	.090	.048	.136
1932.....	1.000	.261	.088	.046	.122
1933.....	1.000	.271	.087	.048	.131

*Including miscellaneous items of less than one per cent of total assets not shown separately.

securities were equal to 10.9 per cent of total assets. From then on, they declined steadily to 8.7 per cent in 1933. This was a decline of 29.5 per cent from the 1929 figure, in comparison with a decline of 30.3 per cent in total current assets in the same period. It is obvious that, since cash declined slightly less than current assets, other items of current value must have declined more rapidly. The inference is that current assets became more "liquid," since cash and securities became a larger percentage of current assets. This assumption is subject, however, to important qualifications. Three factors must be taken into account; first, the actual amount of current assets; second, their rate of circulation; and third, the quality of these assets. These are discussed in a subsequent section.

Both receivables and inventories showed similar changes from 1927 to 1933: both reached their peak in 1929 and their low point in 1932, and both staged a recovery by 1933. Receivables declined from 7.1 per cent of total assets in 1929 to 4.6 per cent in 1932. Inventories fell from 16.1 per cent of total assets in 1929 to 12.2 per cent in 1932. Inventories showed a substantial recovery in 1933, but receivables made only a minor increase.

TABLE II
COMPOSITION OF CURRENT ASSETS OF 172 INDUSTRIAL CORPORATIONS, CLASSIFIED
ACCORDING TO SIZE
(Data for 1927 to 1933 combined)

Size of Company (Amount of Tangible Assets) in Mil- lions of Dollars	Total Tangible Assets	Total Current Assets*	Cash and Securities	Receivables	Inventories
In thousands of dollars					
Total.....	\$109,868,502	\$33,578,554	\$10,463,052	\$6,506,537	\$15,869,539
Less than 5.....	259,201	81,039	18,044	20,187	41,931
5 to 10.....	1,892,738	774,760	248,925	183,027	332,851
10 to 25.....	5,545,588	2,150,793	651,219	564,260	899,490
25 to 50.....	7,512,363	3,029,366	982,397	802,756	1,183,015
50 to 100.....	9,669,741	3,353,588	1,089,484	814,790	1,400,813
100 to 200.....	13,808,555	4,030,125	1,362,560	631,266	1,928,810
200 or more.....	71,180,316	20,158,883	6,110,423	3,490,251	10,082,629
Ratio of item named to total tangible assets					
Total.....	1.000	.306	.095	.059	.144
Less than 5.....	1.000	.313	.070	.078	.162
5 to 10.....	1.000	.409	.132	.097	.176
10 to 25.....	1.000	.388	.117	.102	.162
25 to 50.....	1.000	.403	.131	.107	.157
50 to 100.....	1.000	.347	.113	.084	.145
100 to 200.....	1.000	.292	.099	.046	.140
200 or more.....	1.000	.283	.086	.049	.142

*Including miscellaneous items of less than one per cent of total assets not shown separately.

Inventories constituted a relatively constant portion of current assets. In 1933 they were the same proportion as in 1927. A more rapid decline was noticed in the receivables. Accounts and notes receivable were equal to 17.9 per cent of current assets in 1933, as compared with a peak of 20.9 in 1929. Thus the relative changes in the items constituting current assets represent for the most part a slight gain in cash assets at the expense of the notes and accounts receivable.

One may surmise from such facts that there was a liquidation of both fixed and current capital in the years of depression. This liquidation was more severe in current assets than in total assets or in fixed assets. It was more severe in receivables than in inventories; cash items declined less than current assets as a whole. This picture does not show, however, the extent to which certain of these assets gained at the advantage of others, or the fact that these assets therefore made a more favorable showing than would have been possible otherwise.

The reclassification of the data in Table I to give effect to variations in size of enterprise results in the picture shown in Table II. The

data are the same but they are reclassified by size as measured by total tangible assets. From these figures it is possible to note variations that seem to be somewhat directly related to size of business enterprise.

In order to obtain an idea of the distribution of sizes in the sample presented, as well as the relative importance of each group in the total assets, the following tabulation is presented. The figures here given are for the year 1933.

<i>Size of Company (Amount of Tangible Assets) in Millions of Dollars</i>	<i>Number of Companies, 1933</i>	<i>Total Tangible Assets (000 omitted)</i>
Total.....	172	\$14,135,971
Less than 5.....	20	77,602
5 to 10.....	37	282,560
10 to 25.....	42	670,011
25 to 50.....	30	1,026,204
50 to 100.....	13	881,943
100 to 200.....	14	2,031,102
200 or more.....	16	9,166,549

From these figures it is readily seen that small and medium-sized companies make up the majority of the entire number but control a distinctly minor portion of the total assets.

For Table II also, total assets are employed as the base, or one hundred per cent. Current assets are found to vary from 40.9 per cent of total assets for companies with assets of \$5,000,000 to \$10,000,000 to 28.3 per cent for companies with \$200,000,000 or more of total assets. For five of the seven groups the data show a fairly definite decline in current assets as compared with total assets as companies increase in size.

The next three columns in Table II show the variations in cash and securities, accounts and notes receivables, and inventories. By examining these items it is possible to determine whether the declines in current assets relative to total assets are due primarily to only part of their elements or whether each constituent part of the current assets contributed to the trend just noted.

None of these three items—namely, cash and securities, notes and accounts receivable, and inventories—shows a definitely regular trend, but each of them indicates a materially smaller ratio for the large companies than for the small companies. Thus cash and securities equaled 8.6 per cent of total assets for the companies with \$200,000,000 or more assets, as compared with 13.2 per cent for smaller enterprises with assets of \$5,000,000 to \$10,000,000. In a similar fashion it is observed that notes and accounts receivable, as well as inventories, were a smaller portion of total assets for large than for small com-

TABLE III
COMPOSITION OF CURRENT LIABILITIES OF 172 INDUSTRIAL CORPORATIONS,
1927 TO 1933

Years	Total Tangible Assets	Total Current Liabilities*	Trade-Accounts Payable	Notes and Bills Payable
In thousands of dollars				
Total	\$109,868,502	\$6,628,845	\$3,185,435	\$985,335
1927	15,095,396	1,034,146	497,742	118,622
1928	16,128,546	1,226,111	593,914	129,935
1929	17,229,900	1,238,579	609,829	136,931
1930	17,080,254	980,103	449,952	156,866
1931	15,565,342	780,032	345,168	161,041
1932	14,633,093	667,199	312,628	157,729
1933	14,135,971	702,675	376,202	124,211
Ratio of item named to total tangible assets				
Total	1.000	.060	.029	.009
1927	1.000	.069	.033	.008
1928	1.000	.076	.037	.008
1929	1.000	.072	.035	.008
1930	1.000	.057	.026	.009
1931	1.000	.050	.022	.010
1932	1.000	.046	.021	.011
1933	1.000	.050	.027	.009

*A small sum of miscellaneous accounts payable and accrued items is not shown in the table, although included in the current liabilities.

panies. In other words, all three of these types of items contributed to the variation in current assets.

In order to see more clearly the relative variations among these three items, the ratios of each item to current assets were computed, although no table is presented. Cash and securities showed a surprisingly uniform ratio irrespective of size, making up between .30 and .34 of current assets in all size-groups. Receivables constituted approximately .25 of current assets in all size-groups except the two largest, in which they fell to between .15 and .20. And, contrariwise, inventories ranged close to .40 of current assets except in the two largest size-groups, in which they approached .50 of total current assets.

The only important exception to these relationships of current items to total current assets was found in the smallest-size group—namely, those with total assets of less than \$5,000,000. For these companies, cash and cash items were .22 of current assets, which was below the average, and inventories were .52, which was above the

TABLE IV
COMPOSITION OF CURRENT LIABILITIES OF 172 INDUSTRIAL CORPORATIONS,
CLASSIFIED ACCORDING TO SIZE
(Data for 1927 to 1933 combined)

Size of Company (Amount of Tangible Assets) in Millions of Dollars	Total Tangible Assets	Total Current Liabilities*	Trade-Accounts Payable	Notes and Bills Payable
	In thousands of dollars			
Total.....	\$109,868,502	\$6,628,845	\$3,185,435	\$985,335
Less than 5.....	259,201	23,813	10,326	7,355
5 to 10.....	1,892,738	144,939	59,423	46,558
10 to 25.....	5,545,588	426,597	172,173	114,242
25 to 50.....	7,512,363	511,822	227,197	110,892
50 to 100.....	9,669,741	606,344	271,710	79,747
100 to 200.....	13,808,555	752,088	416,154	89,276
200 or more.....	71,180,316	4,163,242	2,028,452	537,265
	Ratio of item named to total tangible assets			
Total.....	1.000	.060	.029	.009
Less than 5.....	1.000	.092	.040	.028
5 to 10.....	1.000	.077	.031	.025
10 to 25.....	1.000	.077	.031	.021
25 to 50.....	1.000	.068	.030	.015
50 to 100.....	1.000	.063	.028	.008
100 to 200.....	1.000	.054	.030	.006
200 or more.....	1.000	.058	.028	.008

*A small sum of miscellaneous accounts payable and accrued items is not shown in the table, although included in the total current liabilities.

average. Receivables seemed in line with those of other size-groups, approximating .25 of current assets.

There seems to be a definite tendency for all current items to decline in relative size—i.e., relative to total assets—as size of company increases. And, with a few exceptions, each constituent item of current assets likewise seems to maintain a fairly uniform relation to current assets, irrespective of size of company.

Composition of the Current Liabilities

Another group of the current items—namely, the current liabilities—is shown in Tables III and IV. Here the total tangible assets, total current liabilities, trade-accounts payable, and notes and bills payable may be noted. The data are classified by years for the period from 1927 to 1933 and by size-groups. The separation of notes and bills payable from the other current obligations provides a detailed and interesting break-down of the data. It must be employed, however,

with reserve. In some cases it was not possible to separate notes and bills from other current debts, so that they are included in the item for trade-accounts payable. An additional classification was made for accrued and miscellaneous current liabilities, but these are not shown separately.

Current liabilities, as shown in Table III, were at their peak amount of \$1,239,000,000 in 1929, at the same time that total assets reached their peak. At this time current obligations amounted to 7.2 per cent of total assets. Although they were highest in actual amount in 1929, their largest relative position came in 1928, when they accounted for 7.6 per cent of total assets. The rapid decline which set in after 1929 continued until 1932, for which year the actual amount of current debts was \$667,000,000, or more than half of the 1929 figure; they accounted for 4.6 per cent of total assets. The recovery in business operations in 1933 brought the current debts up to 5.0 per cent of total assets.

The liquidation of current assets and the reduction of current debts that were not fully replaced with new debts are clear from examination of the figures for trade-accounts payable. Trade accounts amounted to slightly less than half of current debts in each year except 1933. In that year, expansion of business necessitated inventory and other purchases of more than usual amounts, so that the accounts payable arising from such transactions composed more than half of the total current debts. From 3.7 per cent of total assets in 1929, trade accounts declined to 2.1 per cent in 1932, and then recovered to 2.7 in 1933.

The last column in Table III contains the amounts of notes and bills payable. Throughout the period these items did not vary much from one per cent of the total assets. From .8 per cent in 1927, 1928, and 1929, notes and bills payable increased steadily to 1.1 per cent in 1932, after which they dropped to .9 per cent in 1933. Throughout the period the amount was small relative to total assets, but in relation to current liabilities it was large. In 1927 notes and bills constituted about one-eighth of current debts. At their peak in 1932, they accounted for about one-fourth of current debts. This picture is even more pronounced when it is observed that bills and notes constituted approximately one-fourth of trade-accounts payable in 1929, as compared with one-half in 1932. It should be noted that the bills and notes payable fluctuated largely in inverse relationship to other current obligations in the later years. When other debts were being liquidated, bills and notes were being employed to an increasing extent to provide funds, part of which no doubt were employed to retire trade-accounts payable.

In 1933 there was a material decline in notes and bills payable, both in actual amount and relative to total assets and current debts.

Although miscellaneous current liabilities are not shown in Table III, they may be arrived at by subtraction. These miscellaneous and accrued items showed the sharpest decline of any of the items analyzed in current debts. From 3.1 per cent of total assets in 1928 they declined steadily to 1.4 per cent in 1932 and 1933. In these two years their amount was less than half of the 1928 figure.

Additional light on the composition of the current liabilities is provided by comparing each item with total current liabilities instead of with total assets. Trade-accounts payable were found to constitute somewhat less than half of the current obligations throughout the period, ranging from 48 per cent in 1927 and 1928 to 49 per cent in 1929, and declining to 44 per cent in 1931. Increases in the relative size of trade accounts in 1932 and 1933 brought them to 54 per cent of current liabilities by the end of 1933, which was the highest point for the period surveyed. This increase no doubt reflected the beginning of business expansion.

Notes and bills payable, which ranged close to 12 per cent of current debts from 1927 to 1929, rapidly increased to 24 per cent in 1932, and then dropped to 18 per cent in 1933. The miscellaneous and accrued current liabilities showed a fairly definite trend throughout the years surveyed. They steadily declined from 41 per cent of current payables in 1928 to 29 per cent in 1933.

The data for the analysis of the composition of current liabilities on the basis of size of enterprise are summarized in Table IV. The ratios of current liabilities to total assets for the size-groups indicate a definite tendency for a relative decline in current debt in the larger-sized companies. The smallest companies, those with total assets of less than \$5,000,000, had a ratio of .092, whereas companies with assets of \$100,000,000 to \$200,000,000 had a ratio of .054. A slightly higher ratio was reported for the largest companies.

An equally pronounced relationship between size and trade-accounts payable is evident. Trade-accounts payable were the equivalent of 4.0 per cent of total assets for companies of the smallest size as contrasted with 2.8 per cent for the group of largest companies.

With respect to the amount of short-time borrowing, the smaller enterprises appear to be in less favorable condition. Notes and bills payable were 2.8 per cent of total assets for the companies with less than \$5,000,000 of assets. Sharp declines in the relative amounts of borrowing on notes and bills is evident up to the group with assets of

TABLE V
SUMMARY OF THE CURRENT POSITION OF 172 INDUSTRIAL CORPORATIONS,
1927 TO 1933

Years	Total Tangible Assets	Total Current Assets	Total Current Liabilities	Net Working Capital	
In thousands of dollars					
Total.....	\$109,868,502	\$33,578,554	\$6,628,845	\$26,949,709	
1927.....	15,095,396	4,912,464	1,034,146	3,878,318	
1928.....	16,128,546	5,496,937	1,226,111	4,270,826	
1929.....	17,229,900	5,827,283	1,238,579	4,588,704	
1930.....	17,080,254	5,270,896	980,103	4,290,793	
1931.....	15,565,342	4,418,371	780,032	3,638,339	
1932.....	14,633,093	3,821,198	667,199	3,153,999	
1933.....	14,135,971	3,831,405	702,675	3,128,730	
Ratio of item named to total tangible assets					Ratio of Current Assets to Current Liabilities
Total.....	1.000	.306	.060	.246	5.066
1927.....	1.000	.325	.069	.256	4.750
1928.....	1.000	.341	.076	.265	4.483
1929.....	1.000	.338	.072	.266	4.705
1930.....	1.000	.309	.057	.252	5.378
1931.....	1.000	.284	.050	.234	5.664
1932.....	1.000	.261	.046	.215	5.727
1933.....	1.000	.271	.050	.221	5.453

\$50,000,000 to \$100,000,000, for which the bills and notes amounted to .8 per cent of total assets, or less than one-third the proportion found in the group of smallest companies. No further important decline in this ratio was evident for the two largest-size groups of companies.

Miscellaneous and accrued current liabilities showed no clear relationship to size of enterprise. For practically all size-groups such items accounted for between 2 and 2.5 per cent of total assets.

In a similar manner each of the items in the current obligations was analyzed relative to total current liabilities, by size of company. Trade-accounts payable showed only a moderate relationship between size of company and ratio of trade-accounts to current liabilities. The larger companies had the larger ratios. For the group of corporations with assets of \$100,000,000 to \$200,000,000 the ratio was .55; for the largest-sized companies—namely, those whose assets exceeded \$200,000,000—the ratio was .49. All the other size-groups had trade-accounts payable of less than .45, although none was less than .40, of current obligations.

Notes and bills payable showed a close relationship between size of enterprise and size of ratio. For the smallest companies—namely,

those with assets of less than \$5,000,000—the notes and bills payable were equal to 31 per cent of total current liabilities. For the group of largest companies the bills and notes payable were only 13 per cent of current indebtedness. Between these two groups there was a fairly steady gradation, the ratio declining in inverse relationship to size of business unit. Quite obviously, the conclusions to be drawn from this showing are definitely favorable to the larger enterprises. Not only does the proportion of short-time borrowing on bills and notes to total current liabilities outstanding diminish as one goes from small to large enterprises, but the proportion of such borrowing to the total resources of the enterprise also declines.

Although miscellaneous and accrued current debt showed no trend attributable to size of company when compared with total assets, when these items are compared with total current liabilities a fairly clear tendency for them to become an increasing proportion of current liabilities is apparent as enterprises increase in size. The ratio of these items was .26 for companies with assets of \$5,000,000 to \$10,000,000, and increased to .42 for those with \$50,000,000 to \$100,000,000 of assets. A slight decline from this high ratio was found for the two groups of larger companies.

Working Capital and Current Ratios

A summary of facts given in the four preceding tables is contained in Tables V and VI. In addition, these tables permit the showing of the working capital in connection with its main constituents. As in the preceding tables each item, with the exception of the current ratio, is compared with the total tangible assets.

Each of the items given, except the working capital, has already been presented; hence attention is primarily directed to the working capital and current ratios. In addition, the presence of the figures for current assets, current liabilities, and total assets in the same table makes possible some interesting comparisons of the interrelations among these three items.

Table V shows that for the entire period 1927 to 1933, and for all the companies, current assets accounted for 30.6 per cent of total assets. In a comparable fashion, the current liabilities were found to equal 6 per cent of total assets. The net difference between them—namely, 24.6 per cent—is the size of the working capital relative to total assets. The working capital, or net current assets, provided from long-term sources over and above the sums provided by short-term creditors, was approximately one-fourth of total assets.

TABLE VI
SUMMARY OF THE CURRENT POSITION OF 172 INDUSTRIAL CORPORATIONS
CLASSIFIED ACCORDING TO SIZE
(Data for 1927 to 1933 combined)

Size of Company (Amount of Tangible Assets) in Millions of Dollars	Total Tangible Assets	Total Current Assets	Total Current Liabilities	Net Working Capital	Ratio of Current Assets to Current Liabilities
	In thousands of dollars				
Total.....	\$109,868,502	\$33,578,554	\$6,628,845	\$26,949,709	
Less than 5.....	259,201	81,039	23,813	57,226	
5 to 10.....	1,892,738	774,760	144,939	629,821	
10 to 25.....	5,545,588	2,150,793	426,597	1,724,196	
25 to 50.....	7,512,363	3,029,366	511,822	2,517,544	
50 to 100.....	9,669,741	3,353,588	606,344	2,747,244	
100 to 200.....	13,808,555	4,030,125	752,088	3,278,037	
200 or more.....	71,180,316	20,158,883	4,163,242	15,995,641	
	Ratio of item named to total tangible assets				
Total.....	1.000	.306	.060	.246	5.066
Less than 5.....	1.000	.313	.092	.221	3.403
5 to 10.....	1.000	.409	.077	.352	5.345
10 to 25.....	1.000	.388	.077	.311	5.042
25 to 50.....	1.000	.403	.068	.335	5.919
50 to 100.....	1.000	.347	.063	.284	5.531
100 to 200.....	1.000	.292	.054	.238	5.359
200 or more.....	1.000	.283	.058	.225	4.842

This working capital was 4.07 times the current liabilities, and the ratio of current assets to current liabilities was 5.07.

Definite relationships are evident for the entire group of companies over the period of years from 1927 to 1933. Both current assets and current liabilities had their largest relative size when compared with total assets in 1928, at which time the ratio for the former was .341 and for the latter .076. Working capital for that year was 26.5 per cent of total assets. The actual amounts of current assets, current liabilities, and working capital increased in 1929, but in relation to total assets both current assets and current liabilities declined. The relative decline in current assets was less than that in current liabilities, so that working capital actually showed a slight increase to 26.6 per cent of total assets.

From 1929 to 1932 declines in both current assets and current liabilities were more rapid than that in total assets. Because of greater declines in the former than in the latter item, working capital declined to a low of 21.5 per cent of total assets in 1932. Recovery in inventories, in trade accounts, and in earnings, and other improvements

produced a moderate increase in working capital relative to total assets in 1933.

It should be noted that the current ratio did not reach its highest position in the years when working capital was largest relative to total assets. In fact, there appears to have been a consistent inverse relationship between size of working capital ratio and size of current ratio. As the working capital ratio increased the current ratio declined, and with the shrinkage of the working capital ratio the current assets to current liabilities ratio increased.

The main factor, of course, in these fluctuations of the current ratio is the relatively large change in the size of current liabilities, which in themselves form a small item, so that a modest change in this item may materially influence the current ratio. Since the current liabilities undergo substantial changes in size with the expansion and contraction of business conditions as reflected through trade-accounts payable, they are the key to many changes in the size of the current ratio.

Furthermore, these divergent movements in the working capital and current ratios are much too significant to be dismissed with a brief statement. If some of the facts already brought out are recapitulated at this point, their importance may be disclosed.

As shown in Table V, the current ratio, so far as size was concerned, made its least favorable showing—4.48—in 1928, the year when the ratios of current assets to total assets and current liabilities to total assets were at their peaks of .341 and .076, respectively. In that year the working capital ratio also was at its approximate high point. In the following year, 1929, both current assets and current liabilities declined relative to total assets, but the working capital ratio remained virtually the same as in the preceding year. The current assets amounted to 4.7 times as much as current liabilities.

In each successive year through 1932, the three items of current assets to total assets ratio, current liabilities to total assets ratio, and working capital to total assets ratio declined. As already pointed out, the declines in the current assets were greater in dollar amounts but less in relation to their size than the declines in the current liabilities. Consequently, although working capital also declined both in amount and in size relative to total assets, the decline was relatively less severe than for either the current assets or the current liabilities. In contrast to these declines, the ratio of current assets to current liabilities increased, reaching a peak of 5.73 in 1932. However, with the improvement in current assets, current liabilities, and working

capital in 1933, the current ratio receded to 5.45. Before leaving this aspect of the analysis it may be well to point out that the current ratio was quite satisfactory throughout this period, when viewed by itself. It, however, showed improvement when other ratios pointed to less satisfactory conditions.

Attention is now directed to other aspects of debt-paying capacity. It was found that, as the current ratio increased in size and the current liabilities declined, the trade-accounts payable also declined, and in part this decline in trade-accounts payable was offset by the substitution of notes and bills payable. Items of this latter type are far less favorable than their size alone would indicate. They indicate, largely, the failure of the business enterprise to realize sufficient funds from current assets, as well as from other assets and from earnings, to pay maturing debts due to trade creditors. They set up debts which are very likely not of a self-liquidating character. They prognosticate a distinct deterioration in the quality (although not the size) of the current ratio. They also indicate a lowering in quality of working-capital liquidity and permanence. No stigma is hereby intended to be cast on such notes and bills, but, needless to say, business men seldom seek them during declining business activity, except on account of shortages of funds. Business prefers to employ trade accounts, which arise in the normal course of commerce.

An examination of the tables shows that all these factors reversed their trends in 1933. Notes and bills declined; trade-accounts payable increased; current assets and current liabilities, as well as working capital, increased; but the current ratio declined. Surely, one would not say that the capacity of business to pay its debts in 1933 had lessened from what it had been in 1931 or 1932.

There are other points of equal importance with those already mentioned, which need to be brought to the fore in determining real capacity to pay current debts. One of these is the rate of capital circulation, or flow of capital. The other is the composition of current assets. Current-asset composition is discussed in the following paragraph, whereas the investigation of capital circulation is deferred to a later section. But it is reiterated that these two factors are essential to the analysis and interpretation of debt-paying capacity. They are separated merely for convenience in analysis, but, in reality, they are intimately interrelated.

It has been set forth that current assets as a whole declined relative to total assets from 1928 to 1932, while the current ratio was increasing. Within the current assets themselves, as measured by the

relative amounts of the items, there was an improvement in liquidity, which justifies in part the inference that the higher current ratio indicated that there was also a more solvent condition or ability to pay current debts. Although current assets declined, the constituents thereof showed a tendency for cash to maintain its size better than either receivables or inventories. Receivables declined from 21 per cent to 18 per cent of current assets in the three years following 1929. In the same period inventories declined from .48 to .47; cash increased from .30 to .34. Although the liquidity of current assets increased, the amount of these assets actually declined. On the other hand, total current liabilities also declined, but notes and bills payable showed a relative increase.

In addition to the foregoing, there still remains the question as to the quality of the current assets, particularly inventories, receivables, and marketable securities. There can be little doubt that in many instances the quality of these assets deteriorated even though their liquidity as measured by proportionate amounts improved.

The data in Table VI provide facts as to the total assets, current assets, current liabilities, working capital, and current ratio of companies in the various size-groups. As already indicated, definite relationships are evident as between the ratios of these items and the size of business units, although there are also some exceptions. The group of smallest companies had one of the smallest current assets to total assets ratios, the largest current liabilities to total assets ratio, the smallest working capital to total assets ratio, and the lowest current ratio. Thus, in each of these respects the showing of the companies with assets of less than \$5,000,000 was far less favorable than that of somewhat larger companies; on the whole, these companies made the poorest showing of all the size-groups.

Both current assets and current liabilities show a fairly definite tendency to decline relative to total assets as size of business unit increases. As compared with total assets, the decline in current assets was much greater than the corresponding decline in current liabilities. Consequently, working capital evidences a distinct tendency to decline relative to total assets as the size of company increases, particularly in the groups with assets of more than \$25,000,000.

The highest current ratio is found in the \$25,000,000 to \$50,000,000 size-group, the figure being 5.9. Above this group current assets declined more rapidly than current liabilities, hence the current ratio declined. It should be noted that although companies with assets of \$50,000,000 or more had current ratios which compared quite favor-

ably with those of the lower groups, the working capital ratio of the former was substantially less. In other words, although their working capital was smaller, their current ratios were almost as large. Whereas the key to the current ratio lies in the size of current debt, the size of working capital is more dependent on current assets.

Although the working capital was smaller as compared with total assets in the three largest-size groups, the relatively favorable size of the cash item and of the notes and bills payable are on the side of the larger companies. The two groups of largest companies differ in another respect from the smaller companies. Their inventories are relatively larger and their accounts and notes receivable relatively smaller, as compared with current assets, than is the situation in the smaller enterprises. If the assumption that receivables are more liquid than inventories is valid, then the larger companies are less favorably constituted in this aspect of their structure.

Fixed-Capital Expiration

An additional set of factors bearing on the capacity of corporations to pay current debts may be observed from the data in Tables VII and VIII. Here again, some of the material previously presented is repeated. In addition to current assets, current liabilities, and working capital, the items for fixed assets and for depreciation and depletion are introduced. The relationships between these fixed properties and the current funds, and the potentialities of the former as a source of funds for transfer into current capital, are the points at issue.

As fixed properties are productively consumed, they contribute to the creation of goods or services which find their way into inventories, thence into accounts and notes receivable, and finally into cash. Thus in essence they gradually enter into working capital. Of course, in the sequence of business growth these consumed properties are replaced, so that funds provided by the consumption of productive fixed capital are returned to fixed-capital investment in the form of new properties or replacements. But this latter relationship is not necessarily inevitable. Fixed-property investment or reinvestment is not a regularly recurring act. It occurs irregularly and involves broad executive discretion as to amount, time, type, etc. On the other hand, fixed-capital expiration, for the most part, is a continuous and omnipresent condition, whether plants are idle or active.⁷

⁷Some doubts have been cast upon the older, orthodox ideas of depreciation as usually accepted in accounting. The more recent writers view depreciation as an expense which has some relationship to volume of production, and some to time. For example, J. B. Canning ("A Certain Erratic Tendency in Account-

TABLE VII
RELATIONSHIP OF FIXED-CAPITAL EXPIRATION AND CURRENT CAPITAL OF 172
INDUSTRIAL CORPORATIONS, 1927 TO 1933

Years	Depreciation and Depletion	Fixed Assets	Current Assets	Current Liabilities	Working Capital
	In thousands of dollars				
Total.....	\$4,129,700	\$67,399,877	\$33,578,554	\$6,628,845	\$26,949,709
1927.....	574,165	9,046,193	4,912,464	1,034,146	3,878,318
1928.....	623,481	9,397,971	5,496,937	1,226,111	4,270,826
1929.....	683,920	9,890,247	5,827,283	1,238,579	4,588,704
1930.....	646,505	10,572,281	5,270,896	980,103	4,290,793
1931.....	606,485	10,044,871	4,418,371	780,032	3,638,339
1932.....	513,433	9,410,477	3,821,198	667,199	3,153,999
1933.....	481,711	9,037,837	3,831,405	702,675	3,128,730
	Ratio of depreciation and depletion to item named				
Total.....	.....	.061	.123	.623	.153
1927.....	.....	.063	.117	.555	.148
1928.....	.....	.066	.113	.509	.146
1929.....	.....	.069	.117	.552	.149
1930.....	.....	.061	.123	.660	.151
1931.....	.....	.060	.137	.778	.167
1932.....	.....	.055	.134	.770	.163
1933.....	.....	.053	.126	.686	.154

The recognition of this difference leads naturally to the next point in this trend of thought—the distinction between productive consumption and unproductive outlay-expiration. Productive consumption, or the consumption of durable goods in producing new goods, may be assumed, in general, to represent a transfer of values from fixed to current goods and services. Unproductive fixed-outlay expiration does not represent a transfer of useful values to current capital. Rather, it is fixed capital lost.

The figures given in Tables VII and VIII for depreciation and depletion are thus the gross estimated fixed-outlay expiration, whether due to productive consumption or to unproductive expiration. Some attempt has been made to differentiate between these in an earlier

ants' Income Procedure," *Econometrica*, Vol. 1, pp. 52-62) believes that certain parts of plant facilities are charges to the peak production for which they are created. Perhaps depreciation can be differentiated into two categories, one being a function of time, and the other a function of production. (See Chapters IV and V of *Advanced Cost Accounting* by Charles F. Schlatter, Urbana, 1935.) It must be recognized that as one analyzes fixed assets in detailed classes of properties some of this distinction between depreciation as a function of time and as a function of production may tend to disappear, although one or the other will be found applicable to the various types of properties.

TABLE VIII
RELATIONSHIP OF FIXED-CAPITAL EXPIRATION AND CURRENT CAPITAL OF 172
INDUSTRIAL CORPORATIONS CLASSIFIED ACCORDING TO SIZE
(Data for 1927 to 1933 combined)

Size of Company (Amount of Tangible Assets) in Millions of Dollars	Depreciation and Depletion	Fixed Assets	Current Assets	Current Liabilities	Working Capital
	In thousands of dollars				
Total.....	\$4,129,700	\$67,399,877	\$33,578,554	\$6,628,845	\$26,949,709
Less than 5.....	9,905	152,602	81,039	23,813	57,226
5 to 10.....	60,352	956,488	774,760	144,939	629,821
10 to 25.....	164,464	2,980,539	2,150,793	426,597	1,724,196
25 to 50.....	242,254	4,110,917	3,029,366	511,822	2,517,544
50 to 100.....	312,831	5,377,059	3,353,588	606,344	2,747,244
100 to 200.....	564,689	8,792,105	4,030,125	752,088	3,278,037
200 or more.....	2,775,205	45,030,167	20,158,883	4,163,242	15,995,641
	Ratio of depreciation and depletion to item named				
Total.....	....	.061	.123	.623	.153
Less than 5.....	....	.065	.122	.416	.173
5 to 10.....	....	.063	.078	.416	.096
10 to 25.....	....	.055	.076	.386	.095
25 to 50.....	....	.059	.080	.473	.096
50 to 100.....	....	.058	.093	.516	.114
100 to 200.....	....	.064	.140	.751	.172
200 or more.....	....	.062	.138	.667	.173

study, as well as to show their relative importance.⁸ No further attention is devoted to this problem here, except on one point, because of its intricacy and numerous ramifications.

The determination of what portion of fixed outlays expires unproductively, what portion is utilized in useful production, and to what extent economic values are transferred from fixed to current goods is a highly complex problem. The mere fact that certain properties were employed is not conclusive evidence of such transfer of value. In their essence, fixed assets represent an outlay which differs only in degree from outlays for all other goods and services, both fixed and current. There is no inherent determinable difference between the productive values attributable to machinery or to raw materials.

Even though a part of the fixed capital expires unproductively, it does not necessarily follow that an improvement may not take place in debt-paying capacity through accretion to current funds. The duty of management as exemplified in accounting is such that it seeks to maintain capital. Consequently, in many cases funds derived from

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other sources will be retained within the business to replace capital that has been lost. So it is possible that, where there is only a partial conversion of fixed values expired through productive consumption (or even upon occasion without such conversion), there may be an additional retention of liquid capital for making good working-capital shrinkage, and a consequent maintenance or improvement in debt-paying capacity.

It is evident that the depreciation figures given in Table VII are crude estimates. In this problem of debt-paying capacity they are suggestions of possibilities rather than measures of fact. They represent, from one point of view, the potential funds which may accrue to current capital from fixed capital. They indicate the approximate amount of funds which must be retained or reinvested if maintenance of capital over a period of time is to be achieved.

The first column of the table lists the sums of depreciation and depletion calculated for 172 companies from 1927 to 1933. Some degree of relationship is shown between the size of depreciation and depletion charges and industrial activity. The amount of depreciation and depletion recognized was at its peak of 6.9 per cent of total assets in 1929, and then continuously declined to 5.3 per cent in 1933. It should be noted here that fixed assets reached their peak in 1930. Although the rates of depreciation do not appear high, representing as they do a complete fixed-asset turnover of once in every 14 to 19 years, it should be pointed out that fixed assets include, in many cases, oil-bearing lands, ore reserves, timber, and land, as well as buildings and machinery. It was impossible to segregate these types. Since the land for site purposes cannot be consumed, and since natural resources are likely to be consumed quite slowly, the rates shown above appear quite reasonable if not ample. For the entire period of time, the fixed assets were charged to expense at the rate of 6.1 per cent per year. Naturally, for many companies and industries the rates of fixed-asset expiration and consumption were much more rapid than for this sample; for some they were less rapid.

The sum of the charges for depreciation and depletion as an expense ranged from \$684,000,000 in 1929 to \$482,000,000 in 1933. The significance of these sums as a factor in current capital problems may be partly determined by comparing them with current assets. In 1927 they amounted to 11.7 per cent of current assets. From 1928 to 1931 this percentage of depreciation and depletion to current assets grew from 11.3 to 13.7. Because of marked declines in the charges for the expiration of fixed assets in 1932 and 1933, this ratio declined

moderately; in general, however, it approximated one-eighth of current assets.

A relationship which perhaps reveals more of the potential importance to the debt-paying capacity of an enterprise of funds released from fixed properties is the ratio of depreciation and depletion to current liabilities. The annual charge for fixed-asset expiration averaged .62, or almost two-thirds, of the current debt outstanding at the time of the fiscal reports in the years from 1927 to 1933. The ratio ranged from a low of .51 in 1928 to a high of .78 in 1931. These figures may be interpreted as meaning that the funds from fixed-asset consumption, for each year, if entirely realized, were between one-half and three-fourths of the size of the current debt outstanding at the end of the fiscal year. Even if such consumed assets are productively converted only in part, or even if they are partly reinvested in fixed properties, the potential importance to a company of the remaining sums to be used for creditors' repayments is at once apparent.

Finally, another measure of the size of depreciation and depletion relative to current funds is obtained from the ratio of these amounts to the working capital. The depreciation and depletion charges ranged from approximately one-sixth to one-seventh of the working capital from 1927 to 1933; in 1933, the ratio was .154.

A continuation of this same type of investigation, but with the data reclassified to show the relationships for companies of various sizes, is contained in Table VIII. The ratio of depreciation and depletion to fixed assets does not disclose any clear-cut trend which could be attributed to size of enterprise. More significance, however, attaches to this portrayal of facts than is apparent on the surface. Although the relationship of depreciation and depletion to fixed assets shows no definite trend, the size of fixed assets relative to total assets discloses valuable information on this point.

With one exception, there was a progressive increase of fixed assets relative to total assets as the size of company increased. For the group of companies with assets of \$5,000,000 to \$10,000,000, fixed assets were 51 per cent of total assets. This figure increased rapidly with size of enterprise; for the companies with assets of \$100,000,000 or more, fixed assets provided for 63 per cent of total assets.

Since it was found that the rate of depreciation and depletion on fixed assets did not vary materially with size of company, but that the fixed assets increased relative to total assets as size increased, it follows that the amount of depreciation and depletion charged was larger relative to current assets and working capital in the larger

companies. Although the larger companies have less current capital relative to total assets than the small companies, they have larger fixed assets; larger sums will therefore be released by fixed-asset expiration. Consequently, depreciation and depletion are much larger (relatively as well as actually) as a source of current funds in the large companies than in the small. In addition, it will be recalled that the large companies had relatively smaller current liabilities, as well as current assets and working capital, than the small companies. These factors when considered together produce a much more favorable showing for the large than for the small enterprise as regards their ability to marshal funds for current-debt payment.

The ratios showing size of depreciation and depletion relative to current assets, current liabilities, and working capital by size-groups are shown in Table VIII. In each series of data there are irregularities in the trends. In particular, the data for the companies with assets of less than \$5,000,000 appear different from what might be expected. Their rather high ratios of depreciation and depletion to current assets and to working capital are due in part to a somewhat higher rate of depreciation, as well as to a larger proportion of fixed assets; and, conversely, they have somewhat smaller working capital to total assets ratios than the other small and middle-sized companies report.

Aside from the smallest-size group, the larger companies show much higher ratios of depreciation and depletion to current assets, to current liabilities, and to working capital. The ratios for large companies approach figures which are one and a half to two times the size of those for the smaller companies. Thus the amount of fixed-asset expiration is approximately 14 per cent of current assets for the larger companies and 8 per cent for the smaller. Compared with current liabilities this potential fund is, during a year, equal to between two-thirds and three-fourths of current debts outstanding at the end of the fiscal year for large enterprises as contrasted with between one-third and one-half for smaller companies. The table also shows that this fund was about 17 per cent of working capital for the large companies, and about 10 per cent for the smaller enterprises.

These facts show, in so far as fixed-asset conversion is concerned and to the extent that depreciation and depletion are earned or recovered, that there is a substantial sum potentially available to meet current obligations, provided that such funds can be spared from immediate reinvestment in fixed properties. Moreover, in some con-

cerns they may be employed for other purposes, such as fixed-debt retirement, stock retirement, etc. An earlier study has shown that under conditions of stress or need, or even of curtailment of business demand and incomplete utilization of plant facilities, such reinvestment in new plant may not and will not need to be made.⁹

Velocity of Circulation

There is as yet one other factor in the picture of debt-paying capacity which deserves attention, especially in view of the fact that in part it modifies or limits some of the points of view already brought out. This is the sales volume of business reduced to measures of the rate of flow of capital through the various assets. On the basis of data which are available, this factor is the most difficult of all to show accurately, although if all desired financial facts for an individual enterprise are at hand, this difficulty will disappear.

In connection with the analysis of current assets and current liabilities, some discussion was presented as to their changes in liquidity from year to year, and within the various size-groups. Attention was centered mostly upon the composition of these items, with particular attention to cash items, bills and notes payable, trade accounts, etc. It was noted that as the depression progressed the current position of companies, with certain important qualifications, became more liquid. Furthermore, it appeared that large companies apparently held an advantage over smaller companies in their relative debt-paying capacity. It is now proposed to qualify these points by a discussion of the velocity of circulation.

A number of factors must be considered in the analysis of velocity of circulation of capital. Among these may be listed the length of the manufacturing process, the sums of capital required for inventories, receivables, and cash balances, the terms of sale, the relative proportions of sales for cash or short terms as compared with sales on account, the trade terms in the industry, the collection policy, and the seasonality of the business. There can be no doubt that these vary materially among the different types and sizes of enterprise. The precise influence of each of these factors is obscured in the analysis of large groups of companies in composite fashion. Nevertheless, some of these underlying and conditioning factors must be kept in mind in surveying the data presented in the following paragraphs, as well as in those which have preceded.

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In spite of these variant forces, it still appears that there are some basic differences among companies of different size, which materially condition their ability to adjust themselves to changing pressures for debt payment. And it appears that this point may be made clearer by scrutiny of the rate of capital circulation.

Although, in most respects, the large enterprises appeared to have certain advantages, from a static viewpoint, over the small enterprises in their internal financial conditions and relationships of capital items one to another, yet from other points of view the small companies had offsetting advantages. In so far as their flow of capital is concerned, the small companies reflect a more dynamic condition.

The facts in regard to the rate of flow of capital are contained in Table IX. The data therein presented are not comparable with those contained in the previous tables, because they are derived from quite different sources and samples. But the general picture conveyed, although subject to qualifications, is essentially similar.¹⁰ The material in Table IX from the *Statistics of Income for 1931* embraces 80,106 manufacturing corporations reporting tax returns with balance-sheet and income-account data.

The first four columns of Table IX, in order, show the relationships between the volume of gross sales and the total assets employed, the gross sales and the current assets, the gross sales and the inventories, and the gross sales and the sum of cash and receivables.

For the entire group of companies, the sales were only .65 of total

¹⁰The reason that the same sample of data heretofore employed was not used was the lack of adequate published sales figures. The data given in Table IX were not available for more than two years; only one year is presented. A number of additional analyses of the data in the two samples used showed that in practically all respects the general pictures from the two sources were comparable. The data from the *Statistics of Income* include not only a vastly larger sample of companies, but also a great many small companies—much smaller than those previously used in this study. As will be noticed, the class intervals for the size-groups of companies are approximately comparable.

There are also differences in the accounting classifications of the two samples. These, however, do not seem to be sufficiently important to destroy what common characteristics the data otherwise have. For example, investments, including some marketable securities, are grouped together in the *Statistics of Income*. No allowance has been made for this in the tables here presented; hence current assets are understated. Although this item varies as among sizes of companies, it is not large enough to vitiate the picture conveyed. In fact, its inclusion would show a more decisive result in favor of small companies.

In another respect the data contained in Table IX are subject to limitation. They cover one year. This year, 1931, was indeed an unrepresentative one. Unusual conditions prevailed which might have, in part, weakened the comparisons between large and small companies.

TABLE IX
TURNOVER OF ASSETS AND CURRENT LIABILITIES AND THE RELATIVE SIZE OF DEPRECIATION AND DEPLETION OF
MANUFACTURING CORPORATIONS, 1931

Size of Company (Amount of Tangible Assets) in Thousands of Dollars	Ratio of Gross Sales to:						Deprecia- tion and Depletion to Gross Sales	Deprecia- tion and Depletion to Current Liabilities	
	Total Assets	Current Assets	Inventories	Cash and Receivables	Current Liabilities	Working Capital			Fixed Assets
Total.....	.65	2.04	4.60	3.67	6.89	2.90	1.46	.044	.30
Less than 50.....	1.92	3.97	10.44	6.41	5.67	13.26	5.16	.021	.12
50 to 100.....	1.43	3.14	7.70	5.30	5.44	7.43	3.79	.029	.15
100 to 250.....	1.18	2.73	6.21	4.87	5.50	5.42	2.97	.028	.15
250 to 500.....	.99	2.45	5.28	4.57	5.47	4.44	2.39	.031	.17
500 to 1,000.....	.85	2.27	4.79	4.32	6.08	3.63	2.12	.035	.21
1,000 to 5,000.....	.71	2.04	4.13	4.03	6.66	2.94	1.67	.040	.27
5,000 to 10,000.....	.59	1.83	3.82	3.52	7.39	2.43	1.34	.048	.35
10,000 to 50,000.....	.56	1.91	4.06	3.61	7.64	2.55	1.23	.050	.38
50,000 and over.....	.52	1.84	4.50	3.10	7.75	2.41	1.15	.053	.41

Source: *Statistics of Income, 1931*, Bureau of Internal Revenue, U. S. Treasury Department. Additional data relative to depreciation and depletion were made available by the Bureau of Internal Revenue.

assets in 1931, this figure being heavily influenced by the large companies which are in the minority numerically, but dominate the aggregate sums because of their size. Due allowance must also be made for the fact that these data are derived from operations and financial conditions at virtually the low ebb of the depression. As among the sizes of companies there is a definite gradation in the ratio of gross sales to total assets, from 1.92 for the companies with less than \$50,000 of assets to .52 for companies with \$50,000,000 or more total assets. In other words, it is quite obvious that the turnover of total assets is much slower for large than for small companies, or, to express the same thought differently, the circulation of capital through the composite of total assets is much less rapid for large than for small companies. This difference reflects the smaller volume of sales made by large than by small companies for each dollar of investment.

For the second ratio which is shown in Table IX—namely, gross sales to current assets—the variations among companies of different sizes are pronounced, but not quite so much so, as was the case for turnover of total assets. The entire sample of companies reported a turnover of current assets of 2.04 times per year. The figures varied, with one slight irregularity, from a circulation of current assets at the rate of 3.97 times per year for the smallest companies—namely, those with less than \$50,000 of assets—to a rate of circulation of 1.84 for the companies whose assets exceeded \$50,000,000.

Clearly, the small companies have a distinctly more favorable rate of circulation of current capital than the larger enterprises. In this connection it will be helpful to recall a ratio previously analyzed. It was found that current assets declined relative to total assets as size of company increased. Thus the conclusion to be drawn is that, even though both sales to total assets and current assets to total assets ratios declined as size of enterprise increased, the decline in sales was more severe than that in current assets. As a consequence, there was a still slower circulation of current assets in large than in small companies, even though the former had relatively less current assets. In other words, even though large companies functioned with relatively less current capital, their rate of current-asset circulation was markedly less than the circulation for small companies.

A comparison of gross sales and inventories in the third column of Table IX discloses a similar variation. Although gross sales have been used instead of cost of sales, it is not believed that a materially different picture would be disclosed had the other figures been available. With the exception of the two largest-size groups, a clear tendency is shown for the circulation of capital through inventories to slacken

in the larger companies. Perhaps these figures should be interpreted as meaning that a larger percentage of slow-moving raw materials constitutes the inventories of large companies. And perhaps distinct differences in the manufacturing cycle, or in the length of the processing period, also make impossible as rapid a circulation of inventories (as well as of current assets) for large as for small corporations.

The next ratio shows the relation of gross sales to cash and receivables, which were combined in the *Statistics of Income*. As in the case of the ratios already discussed, there is a clear tendency for the circulation of capital through such assets to fall off as one progresses from the size-groups of small corporations to large corporations.

The fifth column in Table IX compares gross sales with current liabilities.¹¹ In this case, there is a tendency, although with some irregularity for companies of less than \$250,000, for the turnover to increase as size of companies increases. This trend, of course, is just the reverse of that found in the analyses of the total assets and parts of the current assets. This larger turnover of current liabilities reflects primarily one condition pointed out previously: namely, not only do the current assets decline as size of company increases, but current liabilities decline even more sharply than current assets, or for that matter sales also, and for this reason the ratio of gross sales to current liabilities increases as size of enterprise increases. The simple interpretation of this condition is that there is apparently a much more rapid circulation of current liabilities in large than in small corporations, and this rapidity no doubt compensates in part for the relative smallness of the current debt outstanding. Moreover, this situation would not be changed even if the cost of sales less non-current outlays were used, instead of gross sales, in comparison with current liabilities.¹²

There are more implications latent in these trends than the simple interpretation ventured in the preceding paragraph. Among the large enterprises there is one class of expenses (in addition to the profits or

¹¹A more logical comparison would have been between cost of goods (less depreciation and depletion and similar non-current outlays) and current trade-accounts payable plus other current debts arising from operations. This would show the turnover of current liabilities in terms of the flow of costs that usually go through current liabilities. Perhaps some adjustments of a minor character for such payments as dividends, debt retirement, and the like, would have to be made. A computation of the cost of goods to current liabilities ratio was made, using "cost of goods" as reported in the *Statistics of Income*. It showed a trend similar to that of gross sales to current liabilities given in Table IX, although lower as a whole.

¹²See preceding footnote.

losses contained in gross sales) which does not ordinarily pass through current liabilities. These may be designated as current expenses that require no immediate outlay of funds—in other words, do not need to be purchased in the current accounting period. The clearest example of such expenses are depreciation and depletion. Depreciation and depletion constitute larger proportions of the total costs and sales of large than of small companies. Thus, if such expenses were taken out of cost of sales or sales price the resulting turnover of current liabilities would be reduced more for large than for small companies. Although there would still be a more rapid circulation of current liabilities for large companies than for small, the corrected picture would show less divergence than the ratios of gross sales to current liabilities given in Table IX suggest.

The size of depreciation and depletion relative to gross sales is also presented in the table. It ranges from 2.1 per cent to 5.3 per cent for corporations with less than \$50,000 of assets and those with more than \$50,000,000 of assets, respectively. Even for the large corporations, depreciation and depletion on the whole are not of major proportions. But when the expense of depreciation and depletion is related directly to the current liabilities, as has been done in the last column of Table IX, the significance of the item, as well as the disparity between large and small companies, is brought out in a clearer perspective. For the entire group of corporations, annual depreciation and depletion equaled 30 per cent of outstanding current debts, the percentages ranging from 12 per cent of current obligations for the smallest-size group of companies to 41 per cent for the largest-size group.

Perhaps this whole situation may be expressed in terms of the variations in the nature of operations of large and small companies. The large enterprises have relatively more invested in fixed properties and natural resources. Their period of processing is longer and their production is slower than for the small enterprises. Partly as a consequence, the expenses of fixed assets and natural resources, which are designated as depreciation and depletion, constitute substantial portions of their costs and sales prices. On the other hand, for the large companies a greater proportion of their processes is self-contained. Less of their materials and supplies is purchased, and as a consequence current obligations, as well as inventories, are smaller. In addition, their smaller volume of sales (relative to total assets) results in relatively smaller current assets, even though these are large in relation to even smaller current liabilities.

The net result of these conditions is that depreciation and depletion

loom relatively larger in the large than in the small enterprise. The large enterprise requires and has more fixed or prepaid assets, in which there is considerable discretion allowable as to the time when expenditures for replacements shall be made.¹³ To the extent that sales prices provide remuneration for expenses, there are funds which are attributable to fixed-asset consumption or depreciation and depletion. These funds, within certain limits of time and plant policy, provide a reserve that may be employed for current operations, including current-debt payment. For the larger enterprises such funds are relatively larger than for the small enterprises, regardless of whether they are compared with current liabilities, or with the flow of funds through sales or through costs of sales.

¹³Another possible explanation of the tendency for large companies to show a relatively larger item of depreciation and depletion than small companies is attributable to the greater likelihood that small corporations will rent some of their fixed-asset facilities. If part of the fixed properties are rented, then there is no large investment in such assets; neither is there a fund available from revenues for depreciation and depletion. Instead, the expense takes the form of rent, which is payable on a regular current basis, and cannot be subjected to managerial discretion for considerable periods of time.

The net result of any tendency of small companies to rent plants, buildings, and the like, is to remove from their discretionary control the funds which are needed for depreciation and depletion, and to change the expense to a fixed charge—rent. This places the small company at a further disadvantage as compared with the large enterprise, and makes a greater drain on its current funds, thereby reducing the opportunity for the shifting of funds from fixed-property consumption to short-term debt payment.

IV. CONCLUSIONS

Some of the conclusions which have previously been stated, and others which may now be inferred, are summarized here. Although they are not without qualification, most of them appear definite enough to be tentatively accepted.

The central thought of the study has been focused on current debt-paying capacity. Although in certain respects the capacity of the companies studied to pay their maturing debts improved as the depression progressed, and then declined with recovery, there were other definitely contrary factors which operated in the opposite direction. In this study, it is neither practicable nor necessary to evaluate these variant forces and to reach a decision as to which were the more important. Such a procedure would, however, be expedient when dealing with the analysis of individual enterprises for which complete, adequately detailed data were available. The purpose here is to point out these factors, and to show their place in the analysis of debt payment.

First of all, mention may be made of the commonly known fact that current assets declined relatively more rapidly than most other types of assets from 1929 to 1932, and then increased slightly in 1933 with the stimulus of business improvement. As measured by the relative amounts of the items, the liquidity of the current assets showed a slight increase; whereas, if measured by the quality of some of these current assets, it is probable that there was a progressive deterioration until the reversal in 1933.

On the other hand, the current liabilities shrank relatively even more rapidly than current assets in this period. This decline reflected the liquidation of some current debts by employing funds derived from current-asset liquidation—e.g., from inventories, receivables, and other sources. That this condition, however, was not altogether healthy, nor as orderly as might have been desired is suggested by the changes in the items constituting the current liabilities. Although current liabilities declined as a whole, there was an actual and also a material relative increase in bills and notes payable. In other words, there was, in part, a substitution of money borrowed at banks for trade-accounts payable and other debts which had matured or been incurred.

The result of these changes was that working capital declined faster than total assets. The greater amount of shrinkage in current assets was not fully compensated by the declines in current liabilities, even though these latter declines were greater relative to the size of

current liabilities. Consequently, working capital was reduced. The net result of these changes was evidently a reduction in the liquidity of working capital considered as a whole. The slight increase in liquidity (as measured by relative amounts) of the current assets was hardly ample to compensate the deterioration in the quality of some of the current assets, on the one hand, and the gradual shift towards bank loans in current liabilities, on the other hand. With business expansion in 1933, however, these conditions showed signs of a reversal.

These factors, however, are obscured if the current ratio alone is considered. This ratio showed a progressive improvement until 1932; with business expansion in 1933, it reversed itself and declined. As pointed out, the dominant factor ordinarily determining the size and trend of the current ratio is the size of the current liabilities. Small changes in the amount of this item materially influence the size of the current ratio. It is doubtful whether the debt-paying capacity of business enterprises, everything considered, actually improved as the depression progressed. It is questionable whether the liquidity of the working capital and its constituents improved in these years. It is still more doubtful that the current debt-paying capacity declined in 1933, as suggested by the current ratio. Probably the contrary was true.

Another point of view must be considered in appraising the liquidity of the working capital and its component parts. Working capital may be likened to water in a system of pipes and reservoirs. If the water flows rapidly, it will be delivered fresh and clear; if the flow is sluggish, the product delivered may be stale and cloudy. In a similar manner, the circulation of capital through the various current assets, such as inventories, receivables, and cash collections, into debt payment, may be rapid or slow, depending on the volume of business transacted. From 1930 to 1932 there was a progressive decline in volume of business, which was greater than the shrinkage of current assets. It follows that the flow of funds through the current assets into debt payment slackened. The presumption is that the liquidity of the working capital and its constituent parts was further impaired during the depression years, and improved in 1933. This, too, is contrary to the implications of the current ratio that debt-paying capacity increased from 1929 to 1932, and then declined in 1933.

In prognosticating the capacity of companies to pay their debts, particularly at the time of maturity in the future, there are two main classes of transactions which should be considered in addition to the usual features of earnings, business conditions, and the like. The first of these pertains to the normal amounts of expenses for which the

company currently makes an outlay, and the extent to which these outlays may be curtailed in time of need without undue hardship. The second relates to the extent of the outlays for various fixed properties in the past. Such fixed goods may continue to yield services long after their acquisition; hence they may contribute materially to revenue production. Their consumption and expiration is roughly measured by depreciation and depletion. If new outlays for property replacement can be deferred or dispensed with, current funds may be bolstered from this source.

No effort was made in this study to analyze the first of these two types of aids to current capital, partly because of lack of data. A rough approximation of the second, however, showed that fixed-outlay consumption did substantially strengthen the financial stability of many companies. Of course, this depreciation factor indicates the approximate maximum potential accretion to current funds during the year, whereas the current assets or liabilities may be turned over several times. But normally such current assets or current debts are self-replenishing, and the accretion mentioned is of definite importance, and relatively large in size.

By reclassifying the data according to size of enterprise, additional inferences were made possible. These, too, are subject to limitations and irregularities, perhaps even more so than those derived from the analysis of the data by years.

With some exceptions, there is a clear distinction between large and small companies as to the size of their current assets relative to their total assets. The small and moderate-sized enterprises have a relatively larger proportion of their total assets devoted to current assets than do the large companies. Not only do the larger companies have proportionately less current assets, but this same condition is true of each of the items constituting the current assets. For the larger companies the cash and securities, receivables, and inventories are relatively smaller than for the small companies.

In so far as the liquidity of the current assets is concerned, there appears to have been a slight advantage for large corporations when measured by proportions and amounts. As indicated in a later paragraph, there were significant differences when measured by velocity of circulation. No guess is ventured as to the comparative quality of these current assets of small and large companies, although the evidence seems to favor the small companies.

A much sharper contrast and also a clearer trend for variation from small to large companies is to be found in their current liabilities.

The current liabilities when measured in terms of total assets were distinctly larger for small companies than for large. Furthermore, notes and bills payable loomed much larger in proportion to their size, for small than for large companies.

Thus, even though small concerns had relatively more current assets than large enterprises, they also had relatively larger current liabilities. The consequence was that, in general, the small enterprises had lower ratios of current assets to current liabilities, even though in some cases they had larger working capital to total assets ratios. Because, however, of the relatively greater use of bank and similar loans by small than by large corporations, the working capital, as thus viewed, appears more satisfactory for the latter than the former. This would be in agreement with the condition suggested by the current ratio. It is, however, partly, if not fully neutralized by other considerations.

Even though the current ratio of small companies may be lower, and thus less favorable than that of large enterprises in its implications as to their relative debt-paying capacity, the fact remains that many small and most medium-sized enterprises provide more of their current funds from bonds, stocks, earnings, and the like, and hence have relatively more working capital when measured by their relation to total assets. To this extent they show themselves better able to absorb losses of working capital or of current assets, with far less dire effects on their current ratio, than the large enterprises.

In another respect the small enterprises seem to be basically different in structure from the large enterprises; in this they may have an advantage over the larger enterprises. This difference pertains to the velocity of circulation of their working capital and its constituents. Although the data presented were for but a single year, 1931, and that year an unsatisfactory one, it is not likely that the relative conditions of large and small enterprises were materially different in other years. Data for 1932, (not presented in the text) substantiated the findings. The circulation of funds from sales, collections, and the like, through the current assets and into debt payment was much more rapid for small corporations than for large. This condition suggests a more dynamic flow of current capital and a more liquid condition of working capital, current assets, and current liabilities for small than for large enterprises.

In contrast to these favorable characteristics of structural variations of small enterprises over large enterprises, there remains another feature which operates in favor of large enterprises more powerfully

than it functions in small enterprises. This is the potential flow of funds from productive fixed-capital consumption into inventories produced, and hence into working capital. There are several reasons which contribute to this showing. Among these may be mentioned the greater importance of natural resources and reserves for large enterprises, the greater specialization in fixed-plant investment possible in large enterprises, the greater frequency of owned rather than rented properties among large companies, and the likelihood that larger companies will be more completely integrated and perform a more complete range of productive processes than small business units.

These, as well as other factors, make the current depreciation and depletion charge give the large companies an advantage to the extent that such funds were earned or retained. Furthermore, the current assets, the current debts, and the working capital for large corporations were relatively smaller parts of the total assets than for small companies. Hence, relative to these proportionately smaller working-capital funds the current fixed-asset consumption or depreciation and depletion is more important in large than in small enterprises. Or, in other words, since the large companies owe relatively less in current debt, their depreciation and depletion fund is magnified in its size relative to such debts. Among the large corporations such depreciation and depletion funds for the year approached the balance of debt outstanding in current liabilities at the end of the year.

Whether small or large companies have superior debt-paying capacity is thus seen to be a highly complicated problem. A careful weighing of the several relationships briefly discussed in this study, an analysis of the policies of the enterprises, and all the other related economic and financial data are necessary to answer the question of which (if either) is superior. Perhaps the advantage lies somewhat more with the large than with the small business unit. This opinion is based in large part on the apparent ability of large companies to refrain from expenditures in time of need, and also on their potential power of accumulating funds from fixed-asset consumption.

For a specific enterprise, or for a comparison of one enterprise with another, the determination of paying power for current debts is not so difficult as is the case where published data alone are used. If adequate detailed data are available, an appraisal of all the factors bearing on present and future working capital and current debt, plus a judicious consideration of the relative importance of the several factors, should permit a definite answer. Size in itself is but one criterion, and it may be deceptive in specific instances. A weighing of

all the factors that condition present and future working capital is the important point. The nature of a company, the nature of its properties, its type of operations, its capitalization, and similar features should generally be given greater emphasis than mere size.

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